# 4/5 Port Solenoid Valve



## Improved pilot valve

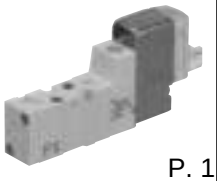
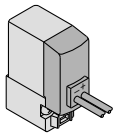
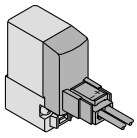
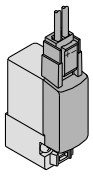
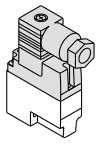
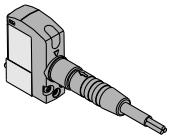
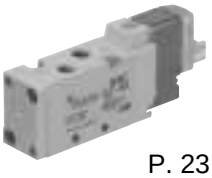
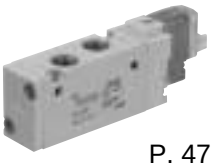
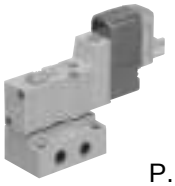
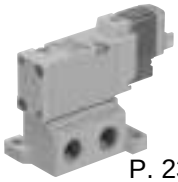
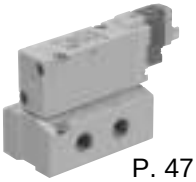
**Pilot valve cover is stronger using stainless steel.**
**Mounting thread is also reinforced from size M1.7 to M2.**

● **Flow Characteristics**

| Series | Flow characteristics | | | |
|---|---|---|---|---|
| | C [(dm³/s·bar)] | b | Cv | Q[ℓ/mibn(ANR)] |
| SYJ3000 | 0.46 | 0.36 | 0.12 | 122 |
| SYJ5000 | 0.83 | 0.32 | 0.21 | 214 |
| SYJ7000 | 2.9 | 0.35 | 0.74 | 762 |

# Rubber Seal
## 4/5 Port Solenoid Valve
# Series SYJ3000/5000/7000

### Variations

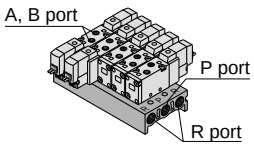
| | Series | Sonic conductance: C [dm³/(s·bar)] | Type of actuation | Voltage | Electrical entry | Option: With light/surge voltage suppressor | Manual override |
|---|---|---|---|---|---|---|---|
| Body ported | **SYJ3000**  P. 1 | Effective area 0.9 mm² {4/2 → 5/3 (A/B → EA/EB)} | 2 Position ● Single ● Double<br>3 Position ● Closed center ● Exhaust center ● Pressure center | **For DC**<br>■ 24 VDC<br>12 VDC<br>6 VDC<br>5 VDC<br>3 VDC<br>**For AC**<br>■ 100 VAC 50/60 Hz<br>110 VAC 50/60 Hz<br>200 VAC 50/60 Hz<br>220 VAC 50/60 Hz | Grommet  <br>L plug connector  <br>M plug connector  <br>DIN terminal  (SYJ5000, 7000 only)<br>M8 connector  | **For DC**<br>■ With surge voltage suppressor<br>■ With light/ surge voltage suppressor<br>**For AC**[Note]<br>■ With light/surge voltage suppressor | ■ Non-locking push type<br>■ Push-turn locking slotted type<br>■ Push-turn locking lever type |
| | **SYJ5000**  P. 23 | 0.47 {4/2 → 5/3 (A/B → EA/EB)} | | | | | |
| | **SYJ7000**  P. 47 | 2.4 {4/2 → 5/3 (A/B → EA/EB)} | | | | | |
| Base mounted | **SYJ3000**  P. 1 | 0.46 {4/2 → 5/3 (A/B → EA/EB)} | | | | | |
| | **SYJ5000**  P. 23 | 0.83 {4/2 → 5/3 (A/B → EA/EB)} | | | | | |
| | **SYJ7000**  P. 47 | 2.9 {4/2 → 5/3 (A/B → EA/EB)} | | | | | |

Note) All AC voltage models have built-in surge voltage suppressor.

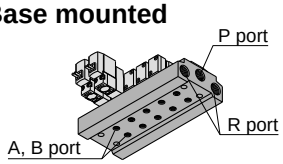
## Manifold Variations

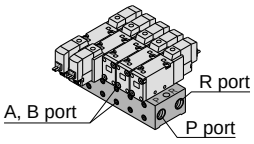
| | Valve series | A, B port location | A, B port size | | | | | | | | | Manifold option | | | Flat ribbon cable manifold |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | With one-touch fitting | | | | | | | | | |
| | | | M3 | M5 | 1/8 | Applicable tubing O.D | | | | | | Individual SUP spacer assembly | Individual EXH spacer assembly | Interface regulator | |
| | | | | | | ø4 | ø6 | ø8 | N3 | N7 | N9 | | | | |
| Body ported | SYJ3000 | Top | ● | — | — | — | — | — | — | — | — | — | — | — | ● |
| | SYJ5000 | | — | ● | — | ● | ● | — | ● | ● | — | ● | ● | — | ● |
| | SYJ7000 | | — | — | ● | — | ● | ● | — | ● | ● | — | ● | — | ● |
| Base mounted | SYJ3000 | Side | ● | ● | — | ● | — | — | ● | — | — | — | — | — | ● |
| | | Bottom | — | — | — | — | — | — | — | — | — | | | | — |
| | SYJ5000 | Side | — | ● | — | ● | ● | — | ● | ● | — | ● | ● | ● (P port regulation) | ● |
| | | Bottom | — | ● | — | — | — | — | — | — | — | | | | — |
| | SYJ7000 | Side | — | — | ● | — | ● | ● | — | ● | ● | ● | ● | ● (P port regulation) | — |
| | | Bottom | — | — | ● | — | — | — | — | — | — | | | | — |

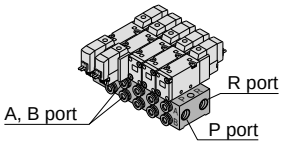
### Body ported

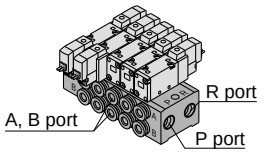



### Base mounted

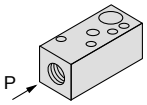


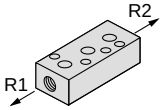



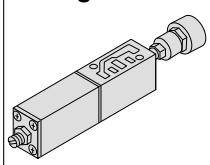

### Individual SUP spacer assembly



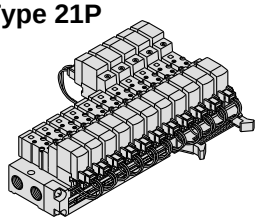

### Individual EXH spacer assembly



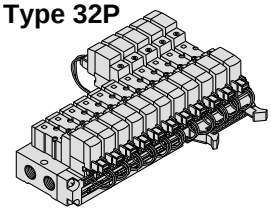

### Interface regulator



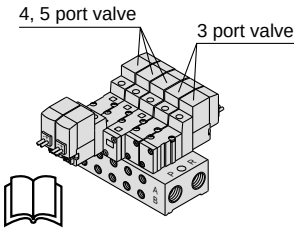
### Type 21P



### Type 32P

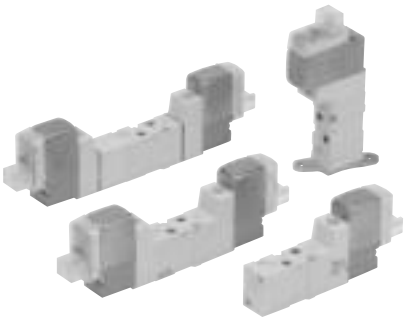


### Mixed mounting of 3 port valves and 4, 5 port valves

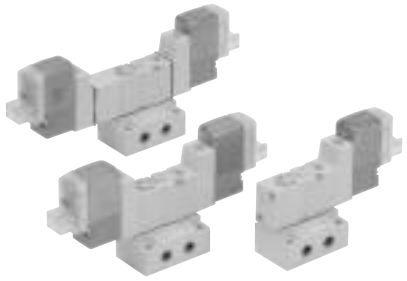



For detailed specifications about SYJ3000, refer to page 14. For SYJ5000, refer to page 38, and for SYJ7000, refer to page 61.

# Rubber Seal
## 4/5 Port Solenoid Valve
# *Series SYJ3000*



Body ported



Base mounted

## Specifications

For details about certified products conforming to international standards, visit us at www.smcworld.com.

| | | |
|---|---|---|
| **Fluid** | | Air |
| **Operating pressure range (MPa)** | **2 position single** | 0.15 to 0.7 |
| | **2 position double** | 0.1 to 0.7 |
| | **3 position** | 0.2 to 0.7 |
| **Ambient and fluid temperature (°C)** | | –10 to 50 (No freezing. Refer to back page 3.) |
| **Response time (ms)** Note 1) **(at 0.5 MPa)** | **2 position single, double** | 15 or less |
| | **3 position** | 30 or less |
| **Max. operating frequency (Hz)** | **2 position single, double** | 10 |
| | **3 position** | 3 |
| **Manual override (Manual operation)** | | Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type |
| **Pilot exhaust method** | | Individual exhaust for the pilot valve, Common exhaust for the pilot and main valve |
| **Lubrication** | | Not required |
| **Mounting orientation** | | Unrestricted |
| **Shock/Vibration resistance (m/s²)** Note 2) | | 150/30 |
| **Enclosure** | | Dust proof (∗ M8 connector conforms to IP65.) |

∗ Based on IEC60529
Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)
Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised states every once for each condition. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

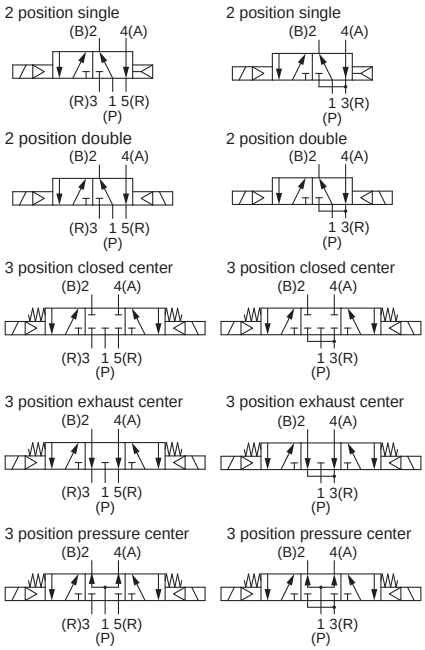
## Solenoid Specifications

| | | | |
|---|---|---|---|
| **Electrical entry** | | | Gromet (G), (H), L plug connector (L), M plug connector (M), M8 connector (W) |
| **Coil rated voltage (V)** | **DC** | | 24, 12, 6, 5, 3 |
| **Allowable voltage fluctuation** | | | 10% of rated voltage ∗ |
| **Power consumption (W)** | **DC** | **Standard** | 0.35 (With light: 0.4) |
| | | **With power saving circuit** | 0.1 (With light only) |
| **Surge voltage suppressor** | | | Diode (Non-polarity type: Valistor) |
| **Indicator light** | | | LED |

∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit. S and Z type: 24 VDC: –7% to +10%, 12 VDC: –4% to +10%
T type: 24 VDC: –8% to +10%, 12 VDC: –6% to +10%

**JIS Symbol**

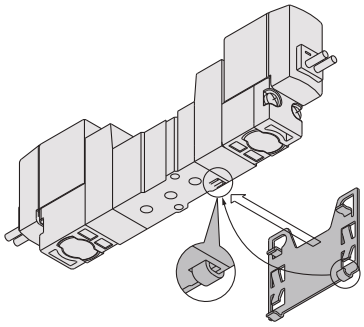
**5 port** **4 port (manifold)**



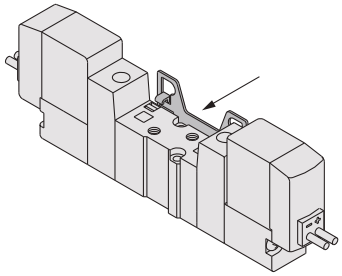

**Made to Order**
**(For details, refer to page 78.)**

## Bracket Mounting

① Insert the lower hook of the mounting bracket into the groove on the bottom of the valve as shown.



② Press the valve and mounting bracket together until the upper hook of the bracket snaps into place in the groove on top of the valve.



## Flow Characteristics/Weight

| Valve model | | Type of actuation | | Port size 1, 5, 3 (P, EA, EB) | Port size 4, 2 (A, B) | Weight (g) Note 3, 4) Grommet | Weight (g) L/M plug connector | Weight (g) M8 connector | Effective area ($mm^2$) | Flow characteristics Note 2) 1→4/2 (P→A/B) C [$dm^3/(s \cdot bar)$] | b | Cv | Q[l/min(ANR)]* | 4/2→5/3 (A/B→EA/EB) C [$dm^3/(s \cdot bar)$] | b | Cv | Q[l/min(ANR)]* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 port Base mounted (with sub-plate) | SYJ314□ | 2 position | Single | M5 | M5 | 62 (36) | 63 (37) | 67 (41) | — | 0.46 | 0.36 | 0.12 | 122 | 0.46 | 0.35 | 0.12 | 121 |
| | SYJ324□ | | Double | | | 79 (53) | 81 (55) | 89 (63) | | | | | | | | | |
| | SYJ334□ | 3 position | Closed center | | | 82 (56) | 84 (58) | 92 (66) | — | 0.47 | 0.33 | 0.12 | 122 | 0.47 | 0.31 | 0.12 | 120 |
| | SYJ344□ | | Exhaust center | | | | | | — | 0.36 | 0.39 | 0.10 | 97 | 0.59 [0.40] | 0.43 [0.33] | 0.16 [0.11] | 164[104] |
| | SYJ354□ | | Pressure center | | | | | | — | 0.58 [0.32] | 0.42 [0.33] | 0.16 [0.080] | 160[83] | 0.46 | 0.32 | 0.11 | 118 |
| 5 port Body ported | SYJ312□ | 2 position | Single | M3 | M3 | 36 | 37 | 41 | 0.9 | | | | | | | | |
| | SYJ322□ | | Double | | | 53 | 55 | 63 | | | | | | | | | |
| | SYJ332□ | 3 position | Closed center | | | 56 | 58 | 66 | | | | | | | | | |
| | SYJ342□ | | Exhaust center | | | | | | | | | | | | | | |
| | SYJ352□ | | Pressure center | | | | | | | | | | | | | | |
| 4 Port Base mounted (For manifold base only) Note 1) | SYJ313□ | 2 position | Single | 1/8 | M5 | 36 | 37 | 41 | — | | | | | | | | |
| | SYJ323□ | | Double | | | 53 | 55 | 63 | | | | | | | | | |
| | SYJ333□ | 3 position | Closed center | | | 56 | 58 | 66 | — | | | | | | | | |
| | SYJ343□ | | Exhaust center | | | | | | — | | | | | | | | |
| | SYJ353□ | | Pressure center | | | | | | — | | | | | | | | |

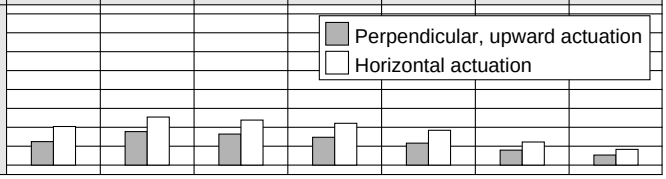
Note 1) Dedicated for manifold base. For details, refer to page 11.
Note 2) [ ] denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 3) ( ): Without sub-plate.
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

## Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

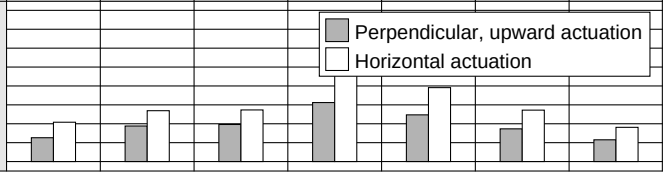
### Body Ported

| Series | Average speed (mm/s) | Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm ø6 | ø10 | ø16 | Series CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm ø20 | ø25 | ø32 | ø40 |
|---|---|---|---|---|---|---|---|---|
| SYJ3120-M3 | 800 700 600 500 400 300 200 100 0 | | | | | | | |




### Base Mounted

| Series | Average speed (mm/s) | Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm ø6 | ø10 | ø16 | Series CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm ø20 | ø25 | ø32 | ø40 |
|---|---|---|---|---|---|---|---|---|
| SYJ3140-M5 | 800 700 600 500 400 300 200 100 0 | | | | | | | |




* Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
* Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
* Load factor: ((Load weight x 9.8) /Theoretical force) x 100%

### Conditions

| Body ported | | Series CJ2 | Series CM2 |
|---|---|---|---|
| SYJ3120-M3 | Tubing bore x Length | ø4 x 1 m | |
| | Speed controller | AS1301F-04 | |
| | Silencer | AN120-M5 | |

| Base mounted | | Series CJ2 | Series CM2 |
|---|---|---|---|
| SYJ3140-M5 | Tubing bore x Length | ø6 x 1 m | |
| | Speed controller | AS2001F-06 | AS2301F-06 |
| | Silencer | AN120-M5 | |

## How to Order

**Type of actuation**

| | |
|---|---|
| 1 | 2 position single solenoid |
| 2 | 2 position double solenoid |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |

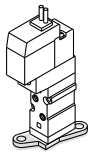
**Light/surge voltage suppressor**

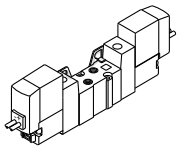
| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppresor |
| Z | With light/surge voltage suppressor |
| R | With surge voltage suppressor (Non-polar type) |
| U | With light/surge voltage suppressor (Non-polar type) |

∗ Power saving circuit is only available in the "Z" type.

**Bracket**

**-:** Without bracket
**F:** With bracket

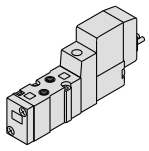

Single


Double

∗ Brackets cannot be retrofitted.

Note) • The double solenoid mounting bracket is supplied unattached.
• To order the double solenoid bracket for use with a single solenoid valve, order the single solenoid valve without a bracket and order the bracket (VJ3000-13-1) separately.
(Example) SYJ3120-5M-M3
VJ3000-13-1

**5 port**


(Type 20 Manifold)

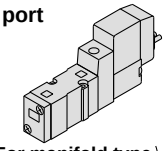
**Rated voltage**

DC

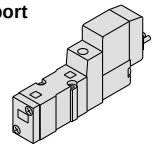
| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Body ported** | SYJ3 | 1 | 2 | 0 | □ | 5 | M | □ | □ | M3 | □ | Q |
| **Base mounted (4 port)** | SYJ3 | 2 | 3 | 0 | □ | 5 | M | □ | □ | | | Q (Manifold use only) |
| **Base mounted (5 port)** | SYJ3 | 2 | 4 | 0 | □ | 5 | M | □ | □ | □ | | Q |

**4 port**


For manifold type 31, S31, 32, S32

**5 port**


For sub-plate, manifold type 41, S41, 46, S46

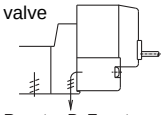
**Coil specifications**

| | |
|---|---|
| - | Standard |
| T | With power saving circuit (24, 12 VDC only) |

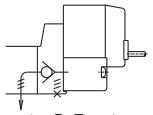
∗ Power saving circuit is not available in the case of W□ type.

**Body option**

**0:** Pilot valve individual exhaust for the pilot valve

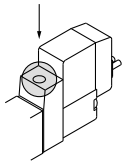



**3:** Common exhaust type for main and pilot valve

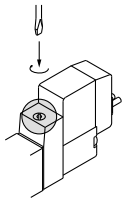



**Manual override**

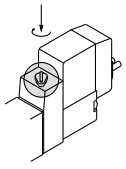
**-:** Non-locking push type



**D:** Push-turn locking slotted type

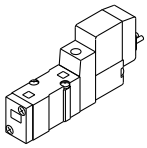


**E:** Push-turn locking lever type

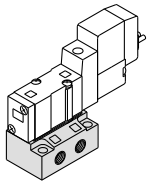


**Port size**

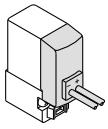
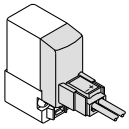
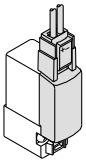
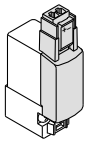
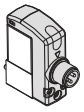
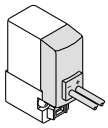
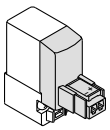
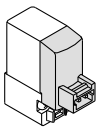
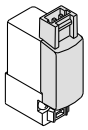
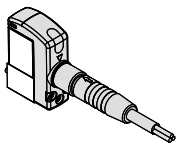
**-:** Without sub-plate


(With gasket and screws)

**M5:** With M5 port sub-plate



**Electrical entry**

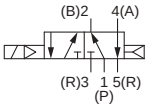
| 24, 12, 6, 5, 3 VDC | | | | 24, 12, 6, 5, 3 VDC |
|---|---|---|---|---|
| **Grommet** | **L plug connector** | **M plug connector** | | **M8 connector** ∗ |
| **G:** Lead wire length 300 mm | **L:** With lead wire (Length 300 mm) | **M:** With lead wire (Length 300 mm) | **MN:** Without lead wire | **WO:** Without connector cable |
|  |  |  |  |  |
| **H:** Lead wire length 600 mm | **LN:** Without lead wire | **LO:** Without connector | **MO:** Without connector | **W□:** With connector cable Note 1) |
|  |  |  |  |  |

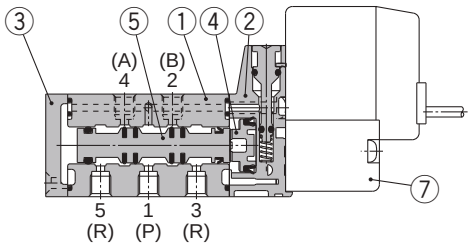
∗ LN, MN type: with 2 sockets.
∗ For connector cable of M8 connector, refer to back page 10.
∗ Connector M8 type "WA" conforming to IEC 60947-5-2 standard, is also available. For details, see page 80.
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 15.)

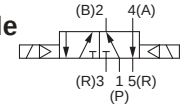
## Construction

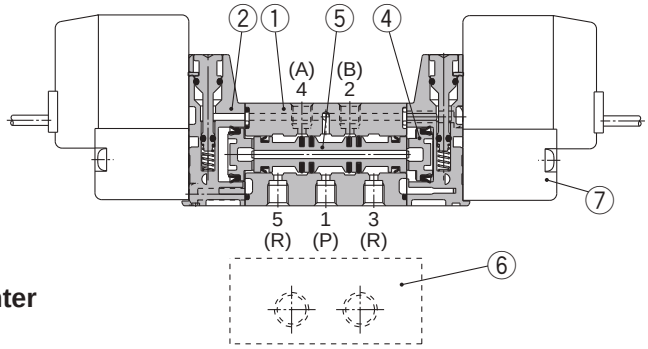
### 2 position single



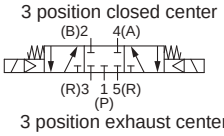

### 2 position double



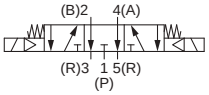




### 3 position closed center/exhaust center/pressure center

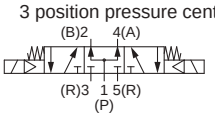
3 position closed center

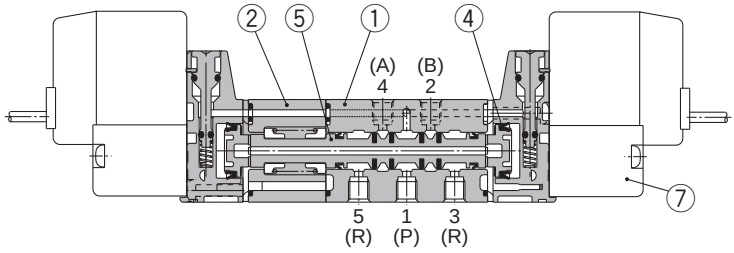



3 position exhaust center




3 position pressure center




(This figure shows a closed center type.)

### Component Parts

| No. | Description | Material | Note |
|---|---|---|---|
| 1 | Body | Zinc die-casted | White |
| 2 | Piston plate | Resin | White |
| 3 | End cover | Resin | White |
| 4 | Piston | Resin | |
| 5 | Spool valve assembly | Alminum, H-NBR | |

### Replacement Parts

| No. | Description | No. | Note |
|---|---|---|---|
| 6 | Sub-plate | SYJ3000-22-1-Q | Zinc die-casted |
| 7 | Pilot valve | V111 (T) - □□□ | |

## How to Order Pilot Valve Assembly

**V111 □ — 5 G □**

**Coil specifications**

| | |
|---|---|
| - | Standard |
| T | With power saving circuit (24, 12 VDC only) |

∗ Power saving circuit is not available in the case of W□ type.

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |

∗ For type W□, DC voltage is only available.

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppresor |
| Z | With light/surge voltage suppressor |
| R | With surge voltage suppressor (Non-polar type) |
| U | With light/surge voltage suppressor (Non-polar type) |

∗ Power saving circuit is only available in the "Z" type.

**Electrical entry**

| | | |
|---|---|---|
| G | Grommet, 300 mm lead wire | |
| H | Grommet, 600 mm lead wire | |
| L | L plug connector | With lead wire |
| LN | | Without lead wire |
| LO | | Without connector |
| M | M plug connector | With lead wire |
| MN | | Without lead wire |
| MO | | Without connector |
| WO | M8 connector | Without connector cable |
| W□ | | With connector cable Note 1) |

∗ For connector cable of M8 connector, refer to back page 10.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

## How to Order Connector Assebmly for L/M Plug Connector

**For DC** : **SY100-30-4A- □**

**Without lead wire (with connector and 2 of sockets only)** : **SY100-30-A**

**Lead wire length**

| | |
|---|---|
| - | 300 mm |
| 6 | 600 mm |
| 10 | 1000 mm |
| 15 | 1500 mm |
| 20 | 2000 mm |
| 25 | 2500 mm |
| 30 | 3000 mm |
| 50 | 5000 mm |

## How to Order M8 Connector Cable

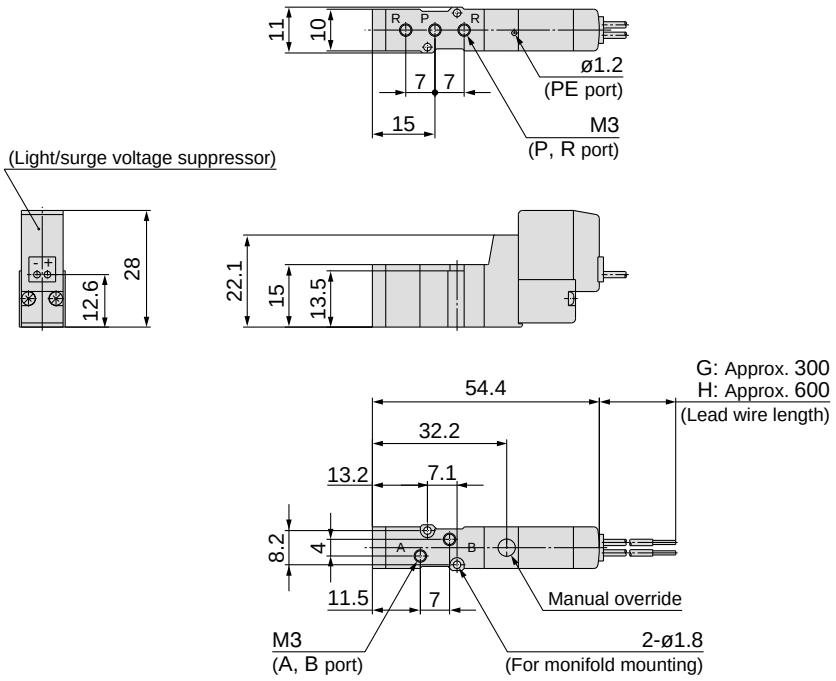
**V100-49-1- □**

**Cable length**

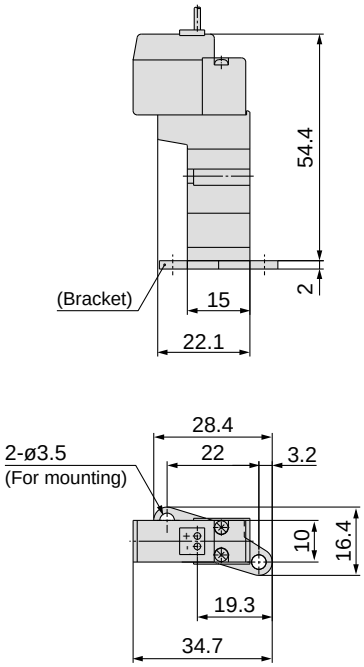
| | |
|---|---|
| 1 | 300 mm |
| 2 | 500 mm |
| 3 | 1000 mm |
| 4 | 2000 mm |
| 7 | 5000 mm |

## 2 Position Single

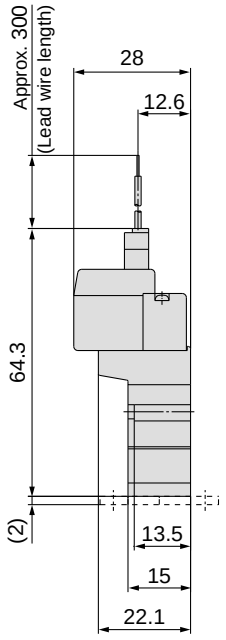
**Grommet (G), (H): SYJ3120-□$^{G}_{H}$□□-M3-Q**



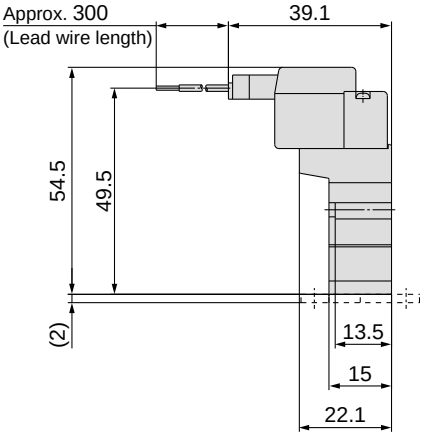

**With bracket:**
**SYJ3120-□$^{G}_{H}$□□-M3-F-Q**



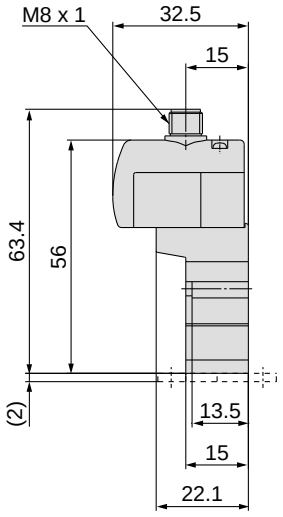

**L plug connector (L):**
**SYJ3120-□L□□-M3 (-F)-Q**




**M plug connector (M):**
**SYJ3120-□M□□-M3 (-F)-Q**



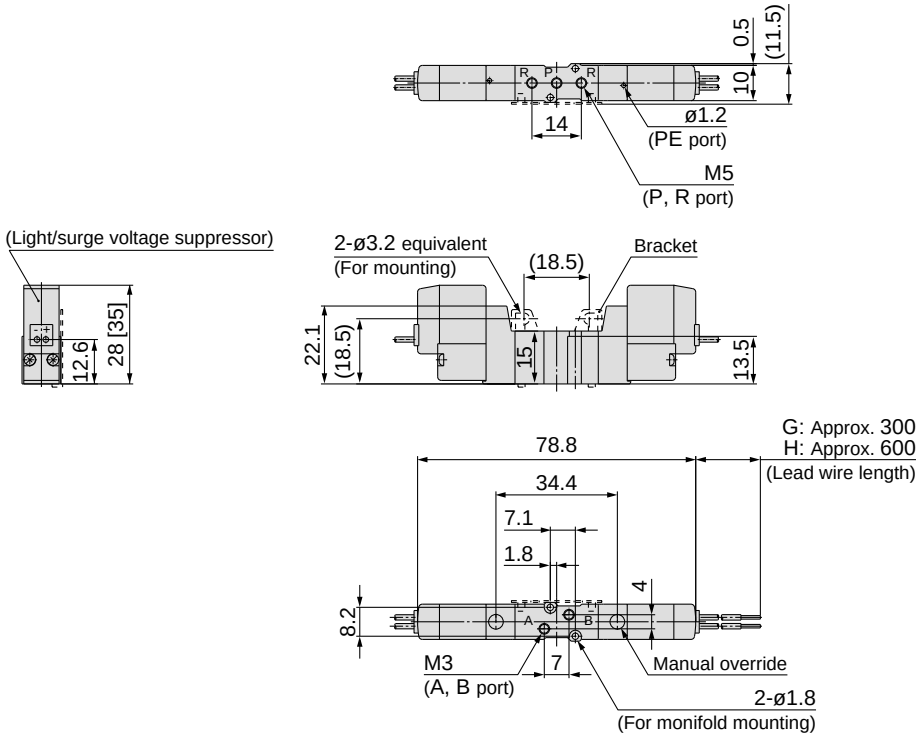

**M8 connector (WO):**
**SYJ3120-□WO□□-M3 (-F)-Q**



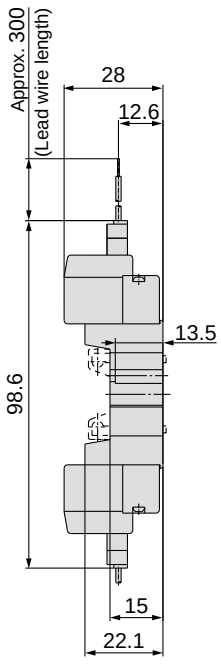

Refer to back page 11 for dimentions with connector cable.

## 2 Position Double

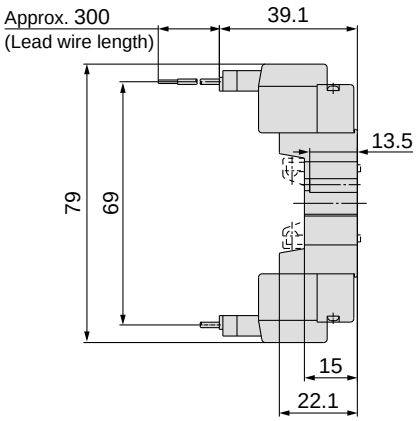
### Grommet (G), (H): SYJ3220-□$^{G}_{H}$□□-M3 (-F)-Q



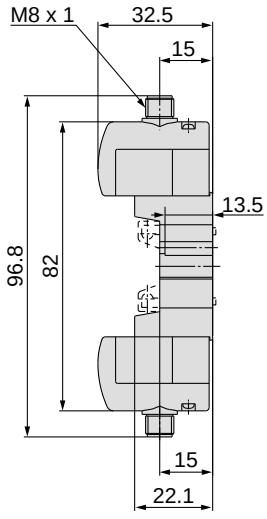

### L plug connector (L): SYJ3220-□L□□-M3 (-F)-Q




### M plug connector (M): SYJ3220-□M□□-M3 (-F)-Q



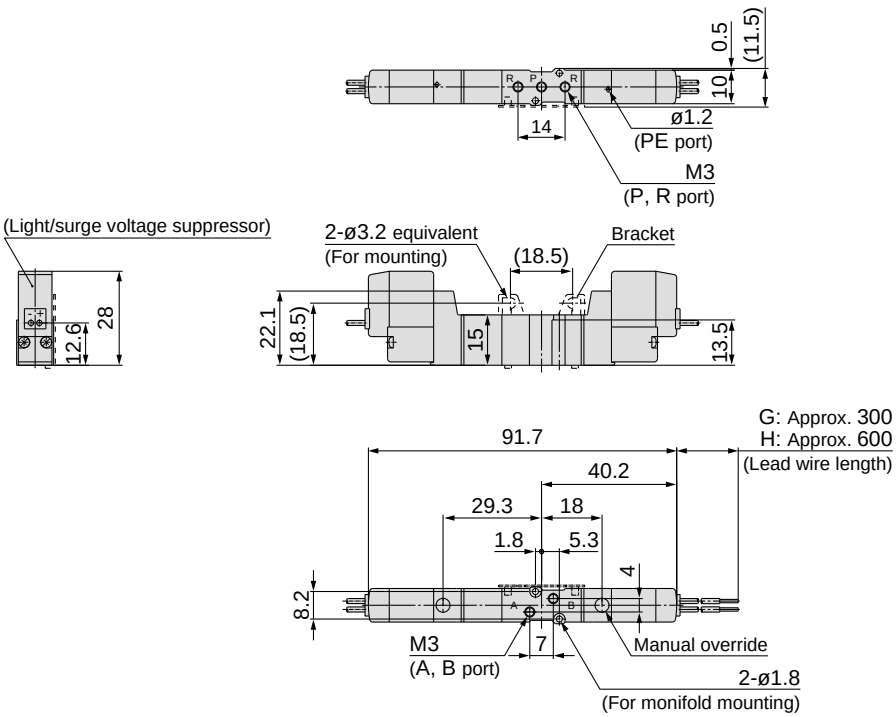

### M8 connector (WO): SYJ3220-□WO□□-M3 (-F)-Q



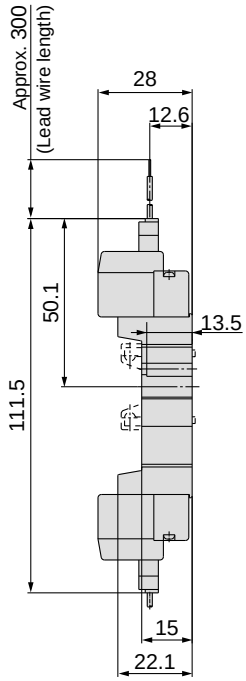

Refer to back page 11 for dimentions with connector cable.

## 3 Position Closed Center/Exhaust Center/Pressure Center

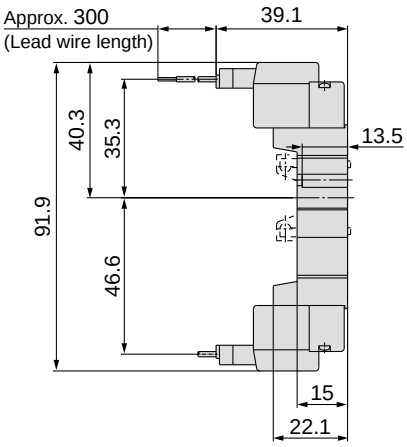
### Grommet (G), (H): SYJ3$^{3}_{5}$20-□$^{G}_{H}$□□-M3 (-F)-Q



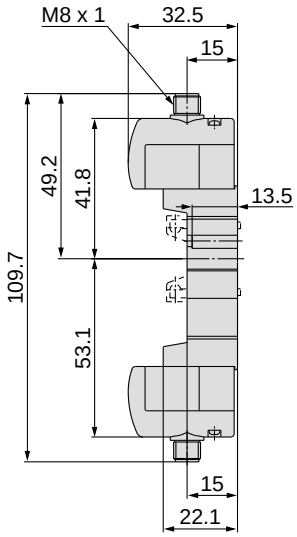

### L plug connector (L): SYJ3$^{3}_{5}$20-□L□□-M3 (-F)-Q




### M plug connector (M): SYJ3$^{3}_{5}$20-□M□□-M3 (-F)-Q



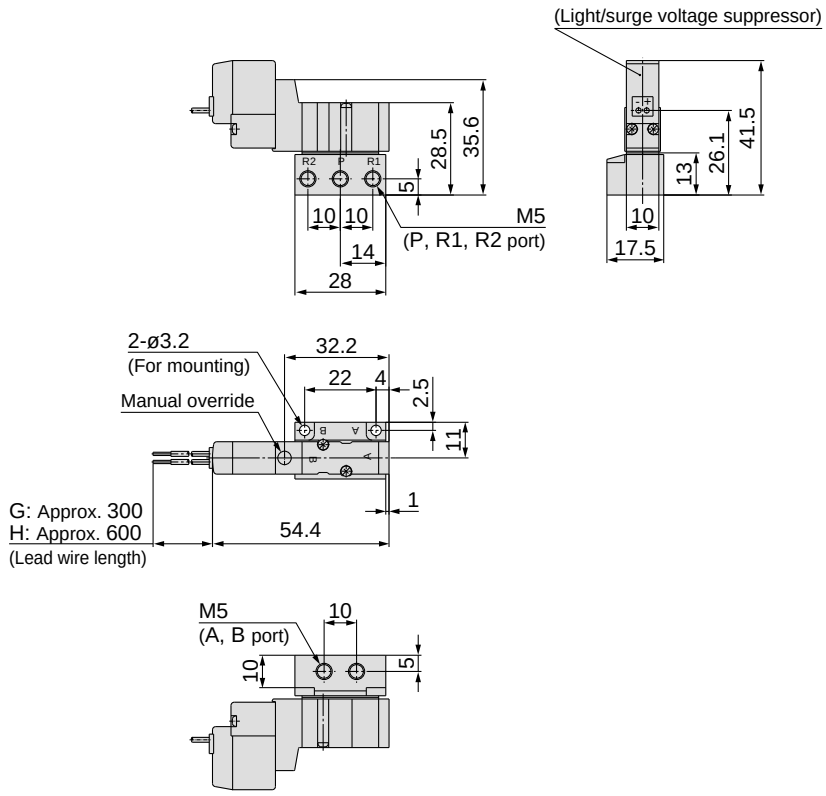

### M8 connector (WO): SYJ3$^{3}_{5}$20-□WO□□-M3 (-F)-Q



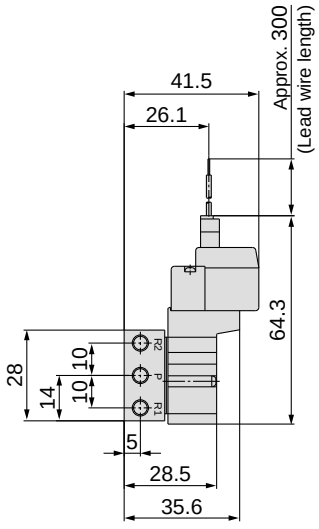

Refer to back page 11 for dimentions with connector cable.

## 2 Position Single

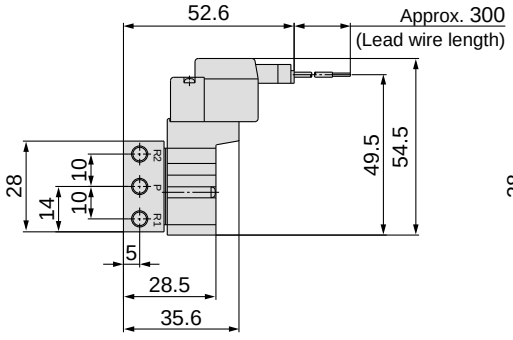
### Grommet (G), (H): SYJ3140-□$^{G}_{H}$□□-M5-Q



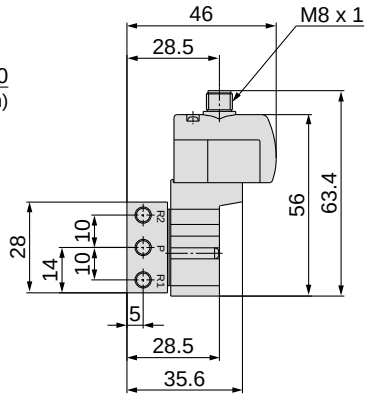

### L plug connector (L): SYJ3140-□L□□-M5-Q




### M plug connector (M): SYJ3140-□M□□-M5-Q



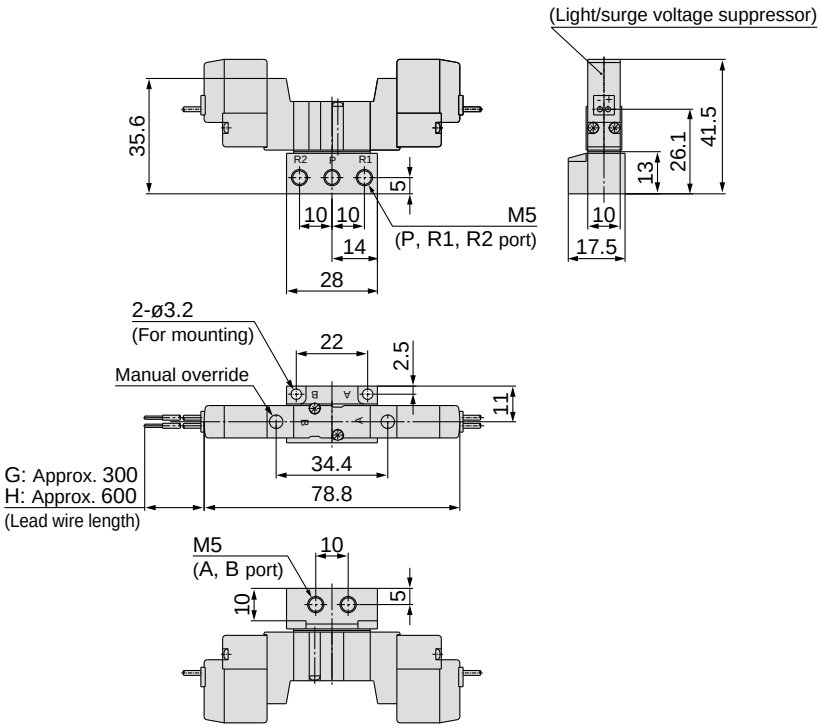

### M8 connector (WO): SYJ3140-□WO□□-M5-Q



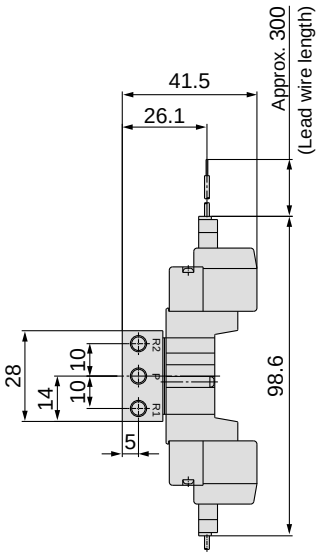

Refer to back page 11 for dimentions with connector cable.

## 2 Position Double

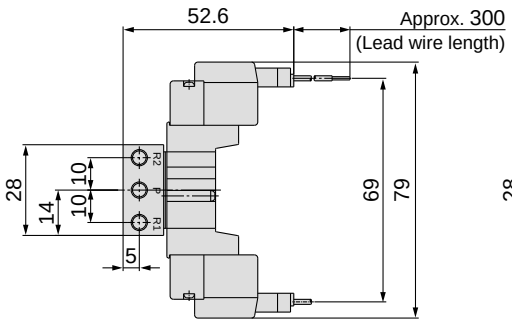
### Grommet (G), (H): SYJ3240-□$^{G}_{H}$□□-M5-Q



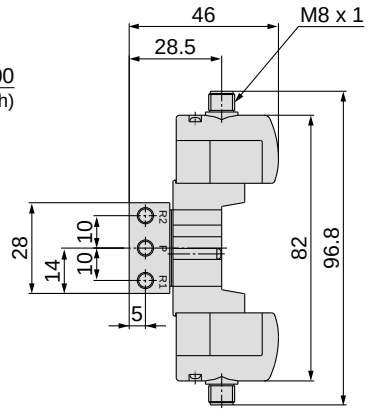

### L plug connector (L): SYJ3240-□L□□-M5-Q




### M plug connector (M): SYJ3240-□M□□-M5-Q



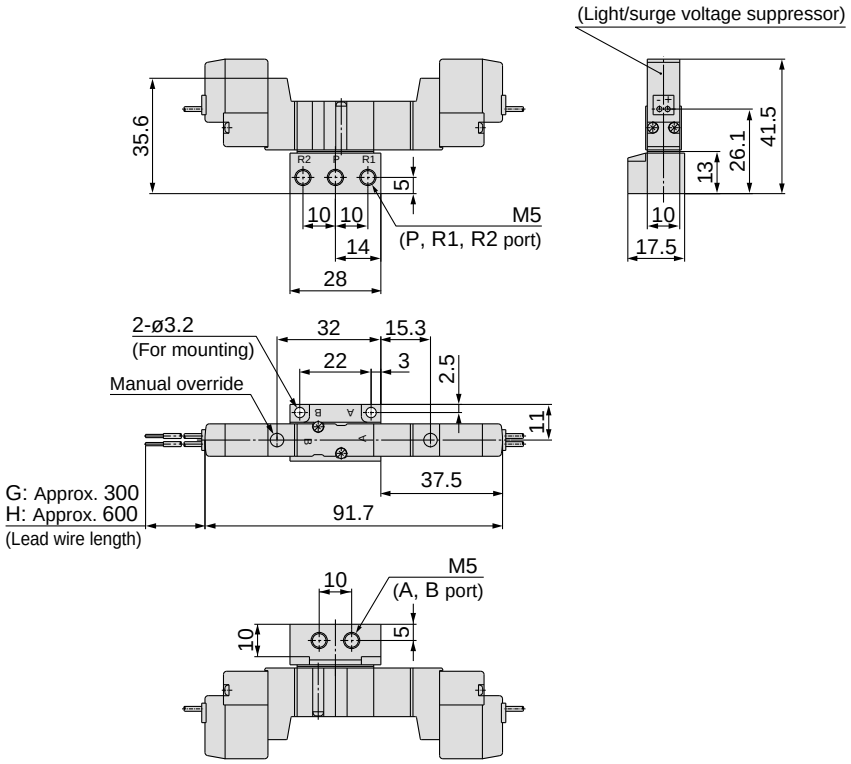

### M8 connector (WO): SYJ3240-□WO□□-M5-Q



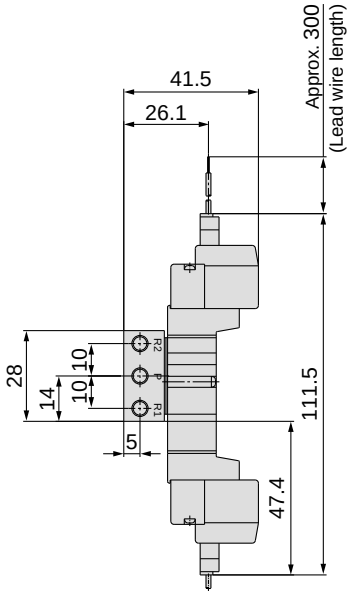

Refer to back page 11 for dimentions with connector cable.

## 3 Position Closed Center/Exhaust Center/Pressure Center

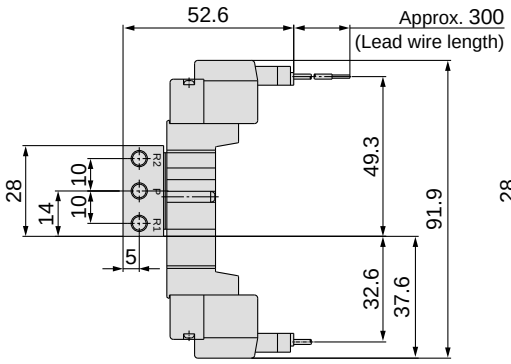
### Grommet (G), (H): SYJ3$^{3}_{4}_{5}$40-□$^{G}_{H}$□□-M5-Q



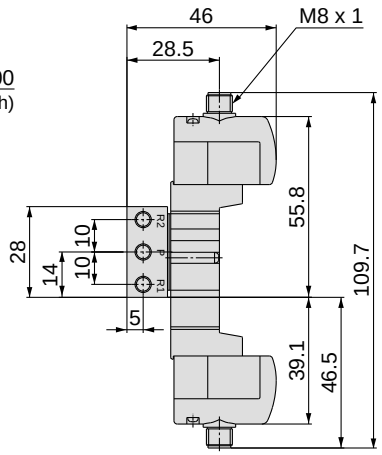

### L plug connector (L): SYJ3$^{3}_{4}_{5}$40-□L□□-M5-Q




### M plug connector (M): SYJ3$^{3}_{4}_{5}$40-□M□□-M5-Q



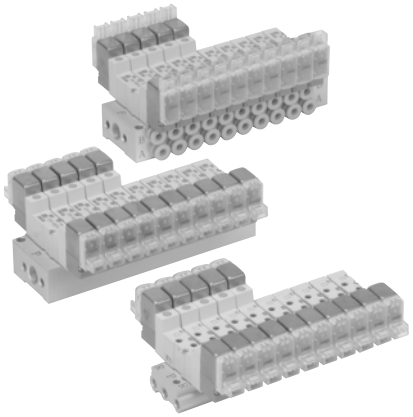

### M8 connector (WO): SYJ3$^{3}_{4}_{5}$40(R)-□WO□□-M5□-Q




Refer to back page 11 for dimentions with connector cable.

# Series SYJ3000
# Manifold Specifications

## Manifold Standard



### Manifold Specifications

| Model | | Type 20 | Type 31, S31 | Type 32, S32 | Type 41, S41 | Type 46, S46 |
|---|---|---|---|---|---|---|
| Manifold type | | Single base/B mount | | | | |
| P (SUP), R (EXH) | | Common SUP/Common EXH | | | | Common SUP Individual EXH |
| Valve stations | | 2 to 20 stations | | | | |
| A, B port Porting specifications | Location | Valve | Base | | | |
| | Direction | Top | Side | | | |
| Port size | P, R port | M5 | | 1/8 | | P: 1/8 R: M5 |
| | A, B port | M3 | | M5, C4 (One-touch fitting for ø4) | | |

### Flow Characteristics

| Manifold | | | Port size | | Flow characteristics 1→4/2 (P→A/B) | | | | Flow characteristics 4/2→5/3 (A/B→R) | | | | Effective area ($mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1(P), 5/3(R) Port | 2(B), 4(A) Port | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min (ANR)]* | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min (ANR)]* | |
| Body ported for internal pilot | Type SS5YJ3-20 | SYJ3□2□ | M5 | M3 | – | – | – | – | – | – | – | – | 0.9 |
| Base mounted for internal pilot | Type SS5YJ3-31 S31 | SYJ3□3□ | M5 | M3 | – | – | – | – | – | – | – | – | 0.9 |
| | Type SS5YJ3-32-M5 | SYJ3□3□ | 1/8 | M5 | 0.25 | 0.19 | 0.060 | 60 | 0.32 | 0.25 | 0.077 | 79 | – |
| | Type SS5YJ3-32-C4 | | | C4 | 0.25 | 0.18 | 0.059 | 59 | 0.30 | 0.27 | 0.075 | 75 | – |
| | Type SS5YJ3-S32-M5 | | | M5 | 0.25 | 0.26 | 0.060 | 62 | 0.29 | 0.15 | 0.062 | 68 | – |
| | Type SS5YJ3-S32-C4 | | | C4 | 0.24 | 0.21 | 0.057 | 58 | 0.27 | 0.18 | 0.062 | 64 | – |
| | Type SS5YJ3-41-M5 | SYJ3□4□ | 1/8 | M5 | 0.32 | 0.25 | 0.081 | 79 | 0.33 | 0.19 | 0.079 | 79 | – |
| | Type SS5YJ3-41-C4 | | | C4 | 0.32 | 0.28 | 0.079 | 80 | 0.35 | 0.24 | 0.084 | 86 | – |
| | Type SS5YJ3-S41-M5 | | | M5 | 0.33 | 0.29 | 0.082 | 83 | 0.34 | 0.17 | 0.081 | 80 | – |
| | Type SS5YJ3-S41-C4 | | | C4 | 0.32 | 0.27 | 0.079 | 80 | 0.34 | 0.24 | 0.084 | 83 | – |
| | Type SS5YJ3-46-M5 | SYJ3□4□ | 1/8 M5 | M5 | 0.20 | 0.25 | 0.048 | 49 | 0.10 | 0.12 | 0.024 | 23 | – |
| | Type SS5YJ3-46-C4 | | | C4 | 0.21 | 0.27 | 0.050 | 52 | 0.21 | 0.13 | 0.047 | 48 | – |
| | Type SS5YJ3-S46-M5 | | | M5 | 0.20 | 0.25 | 0.048 | 49 | 0.19 | 0.16 | 0.024 | 45 | – |
| | Type SS5YJ3-S46-C4 | | | C4 | 0.22 | 0.34 | 0.057 | 57 | 0.10 | 0.090 | 0.024 | 23 | – |

Note) Value at manifold base mounted, 2 position single operating
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

### How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.
Example:

- **SS5YJ3-20-03-Q** ····· 1 set (Manifold base)
  - ∗ **SYJ3120-5G-M3-Q** ····· 2 sets (Valve)
  - ∗ **SYJ3000-21-1A-Q** ····· 1 set (Blanking plate assembly)
- **SS5YJ3-S41-03-C4-Q** ····· 1 set (Manifold base)
  - ∗ **SYJ3140-5LZ-Q** ····· 2 sets (Valve)
  - ∗ **SYJ3000-21-2A-Q** ····· 1 set (Balnking plate assembly)

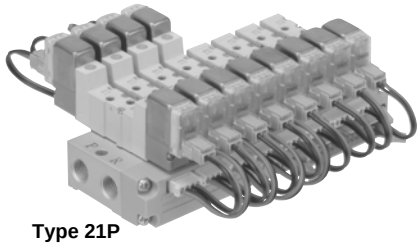
∗ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

## Flat Ribbon Cable Manifold

- **Multiple valve wiring is simplified through the use of the flat cable connector.**
- **Clean appearance**

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



Type 21P

## Flat Ribbon Cable Manifold Specifications

| Model | | Type 21P | Type 32P |
|---|---|---|---|
| Manifold type | | Single base/B mount | |
| P (SUP), R (EXH) | | Common SUP, Common EXH | |
| Valve stations | | 4 to 12 stations | |
| A, B port Porting specifications | Location | Valve | Base |
| | Direction | Top | Side |
| Port size | P, R port | 1/8 | |
| | A, B port | M3 | M5, C4 (One-touch fitting for Ø4) |
| Applicable flat ribbon cable connector | | Socket: 26 pins MIL type with strain relief (MIL-C-83503) | |
| Internal wiring | | In common between +COM and –COM (Z type: +COM only) | |
| Rated voltage | | 24, 12 VDC | |

Note) The withstand voltage specification for the wiring unit section conforms to JIS C 0704, Grade 1 or its equivalent.

## Flow Characteristics

| Manifold | | | Port size | | Flow characteristics 1→4/2 (P→A/B) | | | | Flow characteristics 4/2→5/3 (A/B→R) | | | Effective area ($mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1(P), 5/3(R) Port | 2(B), 4(A) Port | C [$dm^3$/(s·bar)] | b | Cv | Q[ℓ/min (ANR)]* | C [$dm^3$/(s·bar)] | b | Q[ℓ/min (ANR)]* | |
| Body ported for internal pilot | Type SS5YJ3-21P | SYJ3□23 | 1/8 | M3 | – | – | – | – | – | – | – | 0.9 |
| Base mounted for internal pilot | Type SS5YJ3-32P-M5 | SYJ3□33 | 1/8 | M5 | 0.25 | 0.19 | 0.060 | 60 | 0.32 | 0.25 | 79 | – |
| | Type SS5YJ3-32P-C4 | | | C4 | 0.25 | 0.18 | 0.059 | 59 | 0.3 | 0.27 | 75 | – |

Note) Value at manifold base mounted, 2 position single operating

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

### How to Order Manifold

- **SS5YJ3-32P-07-C4-Q**·····1 pc. (Manifold base)
- ∗ **SYJ3133-5LOU-Q** ·····3 pcs. (Valve)
- ∗ **SYJ3233-5LOU-Q** ·····3 pcs. (Valve)
- ∗ **SYJ3000-21-4A-Q**····1 pc. (Blanking plate assembly)
- ∗ **SY3000-37-28A-Q**····3 pcs. (Connector assembly)
- ∗ **SY3000-37-29A-Q**····3 pcs. (Connector assembly)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

## How to Order Valve

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

**Light/surge voltage suppressor**

| | |
|---|---|
| Z | With light/surge voltage suppressor |
| U | With light/surge voltage suppressor (Non-polar type) |

Note) Z: Positive common specifications only.

**For DC** SYJ3 [1 / 2 3] — [5] LO [U] [ ] — [ ] — Q

**Type of actuation**

| | |
|---|---|
| 1 | 2 position single |
| 2 | 2 position double |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |

**A, B port size**

| Symbol | Port size |
|---|---|
| - | Base mounted |
| M3 | M3 |

**Manual override**

| | |
|---|---|
| - | Non-locking push type |
| D | Push-turn locking slotted type |
| E | Push-turn locking lever type |

## How to Order Connector Assembly

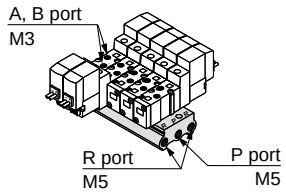
**For 12, 24 VDC**

| | |
|---|---|
| Single solenoid | SY3000-37-28A |
| Double solenoid, 3 position type | SY3000-37-29A |

## Common SUP/Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

### Type 20 (5 Port/Body ported)




**How to Order**

**SS5YJ3–20– 05 -Q**

**Number of stations**

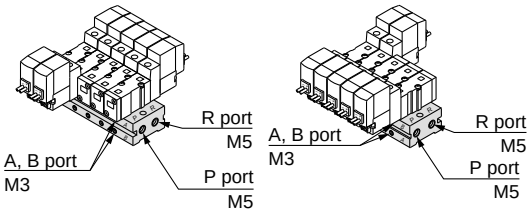
| | |
|---|---|
| 02 | 2 stations |
| : | : |
| 20 | 20 stations |

**Applicable solenoid valve**
SYJ3□20-□□□□-M3-Q
SYJ3□23-□□□□-M3-Q

**Applicable blanking plate assembly**
SYJ3000-21-1A-Q

### Type 31 (4 Port/Base mounted)

**Type 31** **Type S31** (Single solenoid coil is on same side as the A,B port.)




**How to Order**

**SS5YJ3– 31– 05 –M3 -Q**

**Valve mounting direction**

| | |
|---|---|
| - | Single solenoid coil is on opposite side as the A,B port. |
| S | Single solenoid coil is on same side as the A,B port. |

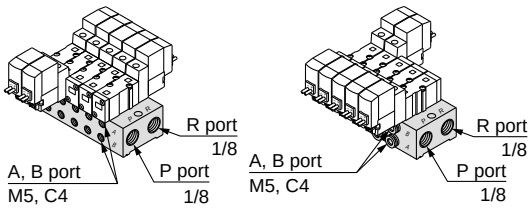
**Stations**

| | |
|---|---|
| 02 | 2 stations |
| : | : |
| 20 | 20 stations |

**Applicable solenoid valve**
SYJ3□30-□□□□-Q
SYJ3□33-□□□□-Q

### Type 32 (4 Port/Base mounted)

**Type 32** **Type S32** (Single solenoid coil is on same side as the A,B port.)




**How to Order**

**SS5YJ3– 32– 05 – M5 -Q**

**Valve mounting direction**

| | |
|---|---|
| - | Single solenoid coil is on opposite side as the A,B port. |
| S | Single solenoid coil is on same side as the A,B port. |

**Stations**

| | |
|---|---|
| 02 | 2 stations |
| : | : |
| 20 | 20 stations |

**A, B port size**

| | |
|---|---|
| M5 | M5 |
| C4 | One-touch fitting for ø4 |
| N3 | One-touch fitting for ø5/32" |

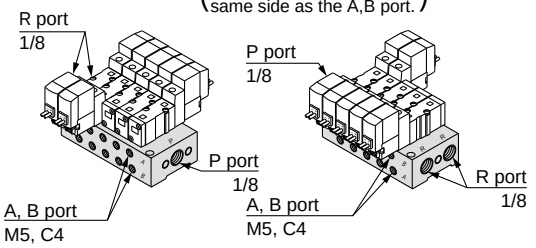
**P, R port thread type**

| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

**Applicable blanking plate assembly**
SYJ3000-21-2A-Q

### Type 41 (5 Port/Base mounted)

**Type 41** **Type S41** (Single solenoid coil is on same side as the A,B port.)




**How to Order**

**SS5YJ3– 41– 05 – C4 -Q**

**Valve mounting direction**

| | |
|---|---|
| - | Single solenoid coil is on opposite side as the A,B port. |
| S | Single solenoid coil is on same side as the A,B port. |

**Stations**

| | |
|---|---|
| 02 | 2 stations |
| : | : |
| 20 | 20 stations |

**A, B port size**

| | |
|---|---|
| M5 | M5 |
| C4 | One-touch fitting for ø4 |
| N3 | One-touch fitting for ø5/32" |

**P, R port thread type**

| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

**Applicable solenoid valve**
SYJ3□40-□□□□-Q
SYJ3□43-□□□□-Q

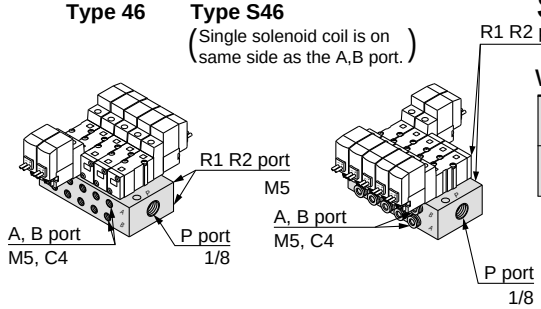
**Applicable blanking plate assembly**
SYJ3000-21-2A-Q

## Common SUP/Individual EXH

Note) For more than10 stations, supply air to both sides of P port.

### Type 46 (5 Port/Base mounted)

**Type 46** **Type S46** (Single solenoid coil is on same side as the A,B port.)




**How to Order**

**SS5YJ3– 46– 05 – M5 -Q**

**Valve mounting direction**

| | |
|---|---|
| - | Single solenoid coil is on opposite side as the A,B port. |
| S | Single solenoid coil is on same side as the A,B port. |

**Stations**

| | |
|---|---|
| 02 | 2 stations |
| : | : |
| 20 | 20 stations |

**A, B port size**

| | |
|---|---|
| M5 | M5 |
| C4 | One-touch fitting for ø4 |
| N3 | One-touch fitting for ø5/32" |

**P port thread type**

| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

**Applicable solenoid valve**
SYJ3□40-□□□□-Q
SYJ3□43-□□□□-Q

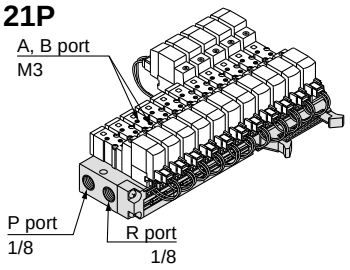
**Applicable blanking plate assembly**
SYJ3000-21-2A-Q

## Flat Ribbon Cable Manifold

### Common SUP/Common EXH

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

#### Type 21P




**How to Order**

**SS5YJ3–21P– 07 – □ -Q**

**Stations**

| | |
|---|---|
| **04** | 4 stations |
| **:** | : |
| **12** | 12 stations |

**P, R port thread type**

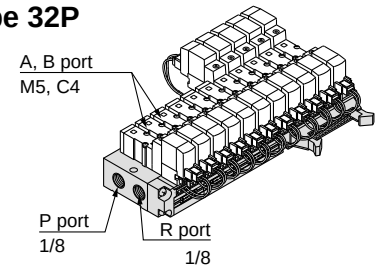
| | |
|---|---|
| **-** | Rc |
| **00F** | G |
| **00N** | NPT |
| **00T** | NPTF |

**Applicable solenoid valve**
**Refer to page 12.**

**Applicable connector assembly**
**Refer to page 12.**

**Applicable blanking plate assembly**
SYJ3000-21-3A-Q
(With dust cap)

#### Type 32P




**How to Order**

**SS5YJ3–32P– 07 – C4 □ -Q**

**Stations**

| | |
|---|---|
| **04** | 4 stations |
| **:** | : |
| **12** | 12 stations |

**A, B port size**

| | |
|---|---|
| **M5** | M5 |
| **C4** | One-touch fitting for ø4 |
| **N3** | One-touch fitting for ø5/32" |

**P, R port thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

**Applicable solenoid valve**
**Refer to page 12.**

**Applicable connector assembly**
**Refer to page 12.**

**Applicable blanking plate assembly**
SYJ3000-21-3A-Q
(With dust cap)

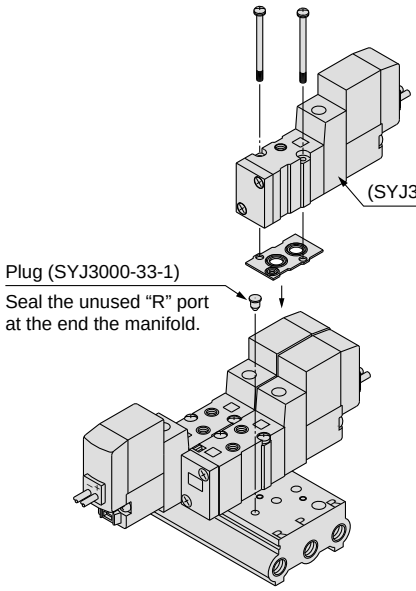
## Mixed Installation of the SYJ300 and the SYJ3000 Valves on the Same Manifold

Series SYJ300 valves can be mounted on the manifolds for Series SYJ3000.

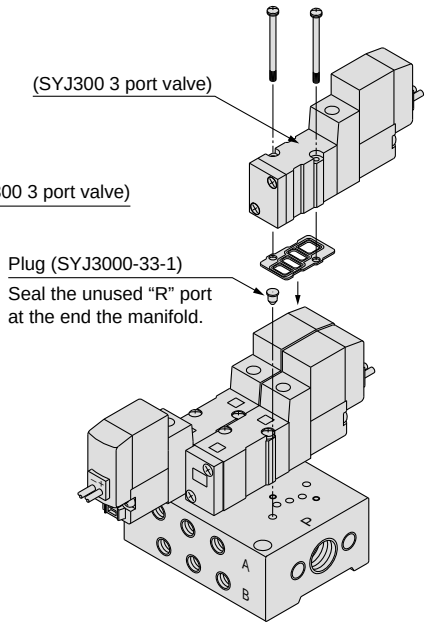
① **SS5YJ3-20, SS5YJ3-21P**
The 3 port valve can be used by simply sealing off the unused “R” port with rubber plug SYJ3000-33-1.
Applicable solenoid valves:
Series SYJ312, SYJ312M, SYJ322, SYJ322M

② **SS5YJ3-31, -S31, SS5YJ3-32, -S32, SS5YJ3-46, -S46, SS5YJ3-32P**
The 3 port valve can be used without modification. The A port of the valve will flow out of the B port of the manifold.
Applicable solenoid valves:
Series SYJ314, SYJ314M, SYJ324, SYJ324M

③ **SS5YJ3-41, -S41**
The 3 port valve can be used on the 4 port manifold by simply sealing off the unused “R” port with rubber plug SYJ3000-33-1. The A port of the valve will flow out of the B port of the manifold.
Applicable solenoid valves:
Series SYJ314, SYJ314M, SYJ324, SYJ324M




**Type SS5YJ3-20**




**Type SS5YJ3-41**

A port of the 3 port valve flows out of the manifold B port.

### ⚠ Caution

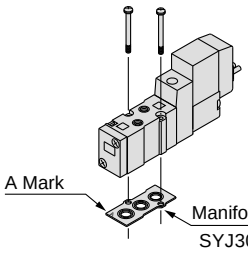
**Mounting screw tightening torques**

**M1.7: 0.12 N·m**

**Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.**

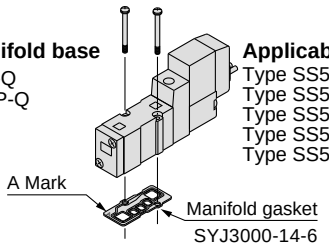
## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

### 5 port body ported (Type SYJ3□2$^{0}_{3}$-Q)



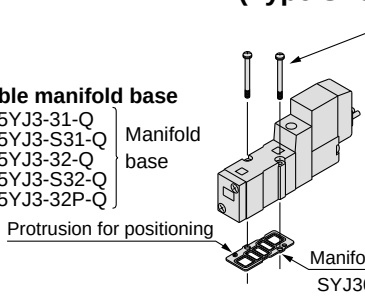

**Applicable manifold base**
Type SS5YJ3-20-Q
Type SS5YJ3-21P-Q
Manifold base

### 4 port base mounted (Type SYJ3□3$^{0}_{3}$-Q)




**Applicable manifold base**
Type SS5YJ3-31-Q
Type SS5YJ3-S31-Q
Type SS5YJ3-32-Q
Type SS5YJ3-S32-Q
Type SS5YJ3-32P-Q
} Manifold base

### 5 port base mounted (Type SYJ3□4$^{0}_{3}$-Q)

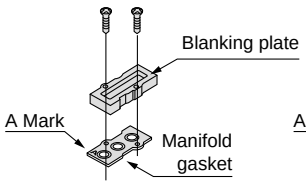



**Applicable manifold base**
Type SS5YJ3-41-Q
Type SS5YJ3-S41-Q
Type SS5YJ3-46-Q
Type SS5YJ3-S46-Q
} Manifold base

Note) Make sure to align the manifold gasket with the groove of the valve body.

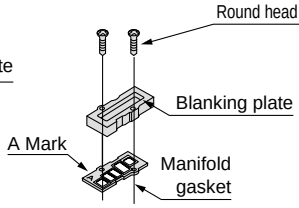
## Combination of Blanking Plate Assembly and Manifold Base

### Blanking plate assembly SYJ3000-21-1A-Q




**Applicable manifold base**
Type SS5YJ3-20-Q Manifold base

### Blanking plate assembly SYJ3000-21-2A-Q

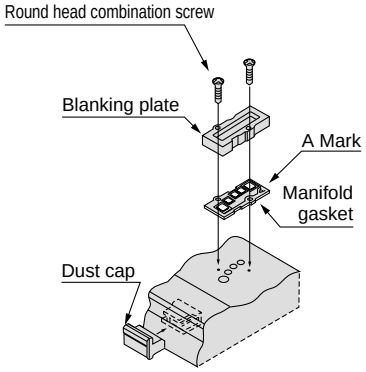



**Applicable manifold base**
Sub-plate
Type SS5YJ3-41-Q
Type SS5YJ3-S41-Q
Type SS5YJ3-46-Q
Type SS5YJ3-S46-Q
Type SS5YJ3-31-Q
Type SS5YJ3-S31-Q
Type SS5YJ3-32-Q
Type SS5YJ3-S32-Q
} Manifold base

Note) Manifold gasket "SYJ3000-14-2" can be used with the following manifold bases.

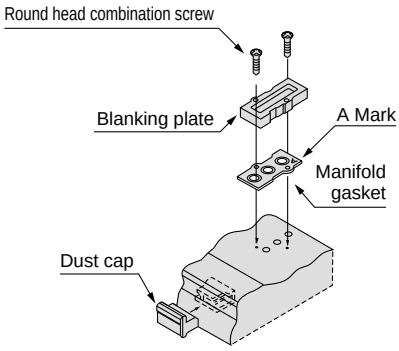
Manifold base of { Type SS5YJ3-31-Q / Type -S31-Q / Type -32-Q / Type -S32-Q }

### Blanking plate assembly SYJ3000-21-4A-Q




Applicable manifold base
**Type SS5YJ3-32P-Q**
Manifold base

### Blanking plate assembly SYJ3000-21-3A-Q

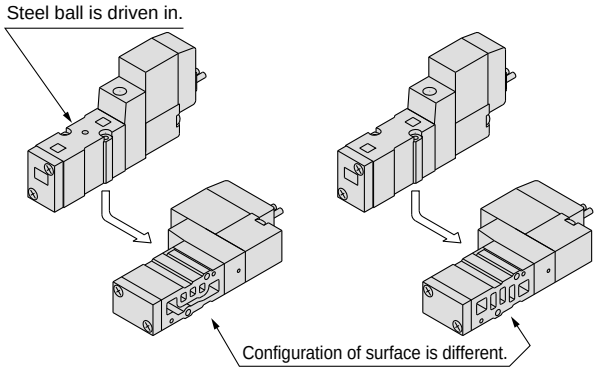



Applicable manifold base
**Type SS5YJ3-21P-Q**
Manifold base

## Difference between SYJ3□3$^{0}_{3}$ and SYJ3□4$^{0}_{3}$

### SYJ3□30, 3□33 (4 port)

### SYJ3□40, 3□43 (5 port)




## ⚠ Caution

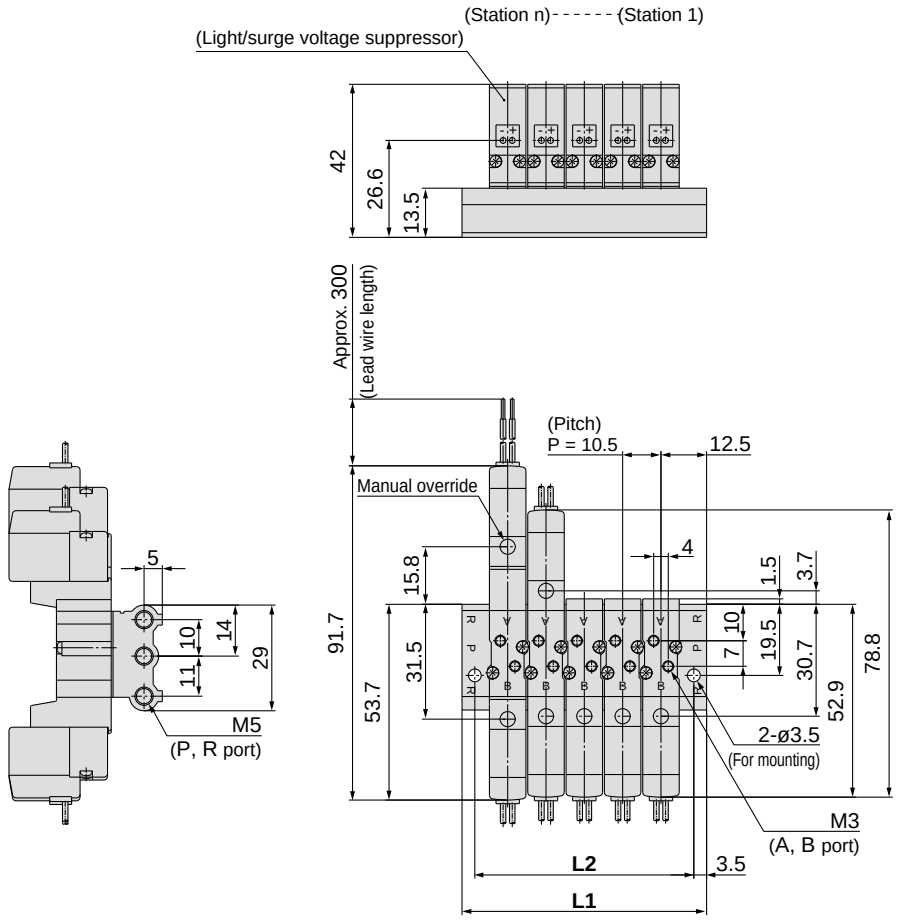
**Mounting screw tightening torques**

**M1.7: 0.12 N·m**

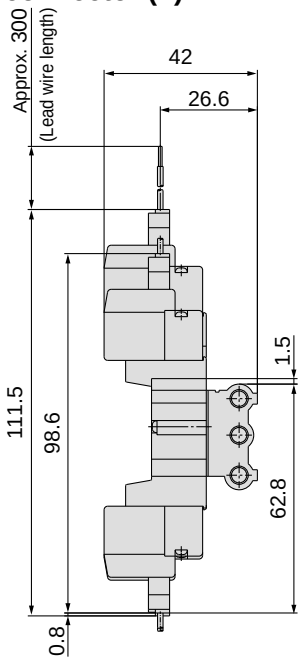
**Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.**

## Type 20 Manifold: Top Ported/SS5YJ3-20-Stations-Q

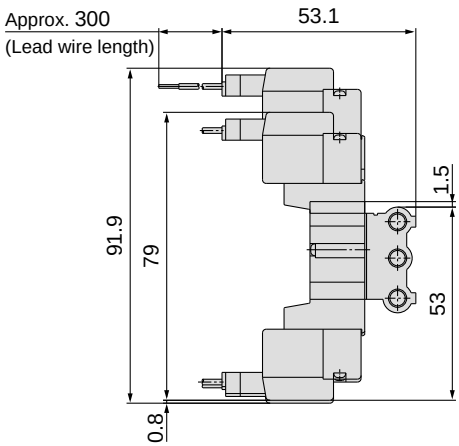
### Grommet (G)



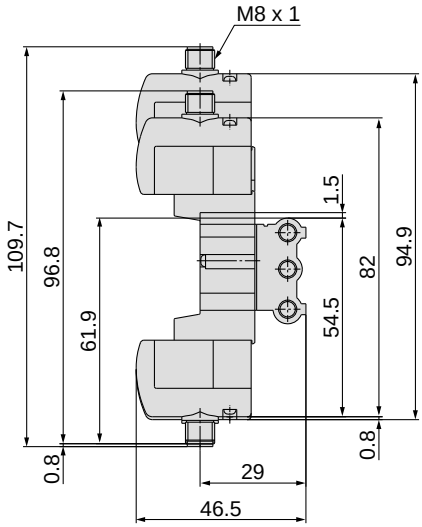

### L plug connector (L)




### M plug connector (M)




### M8 connector (WO)

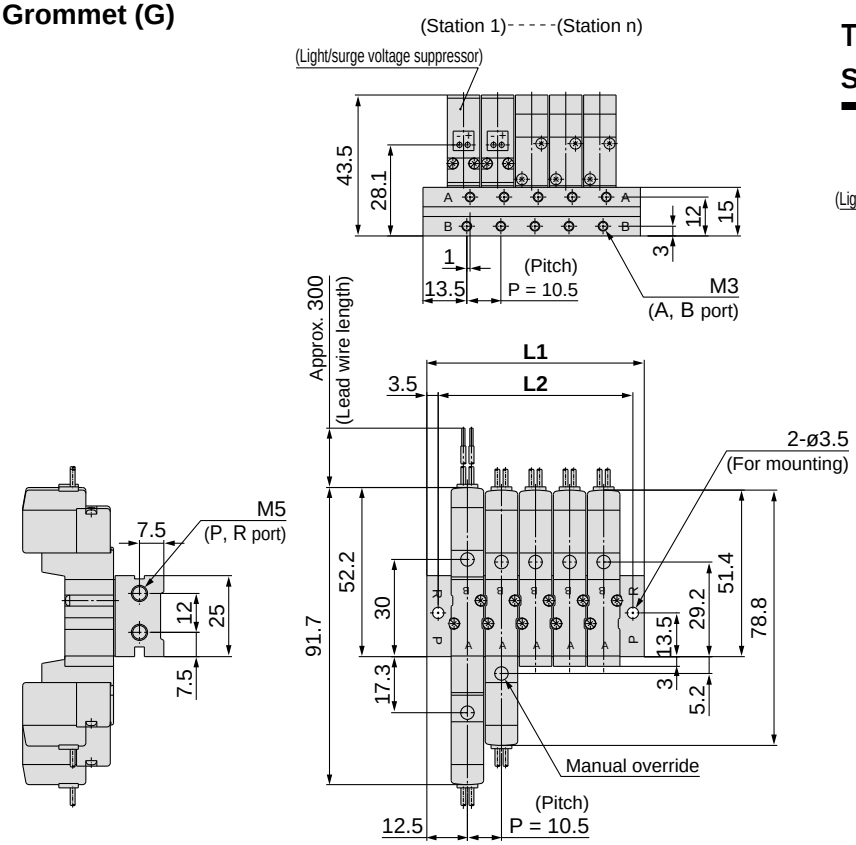



Refer to back page 11 for dimentions with connector cable.

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 35.5 | 46 | 56.5 | 67 | 77.5 | 88 | 98.5 | 109 | 119.5 | 130 | 140.5 | 151 | 161.5 | 172 | 182.5 | 193 | 203.5 | 214 | 224.5 |
| **L2** | 28.5 | 39 | 49.5 | 60 | 70.5 | 81 | 91.5 | 102 | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 |

## Type 31 Manifold: Side Ported/SS5YJ3-31-Stations-M3-Q

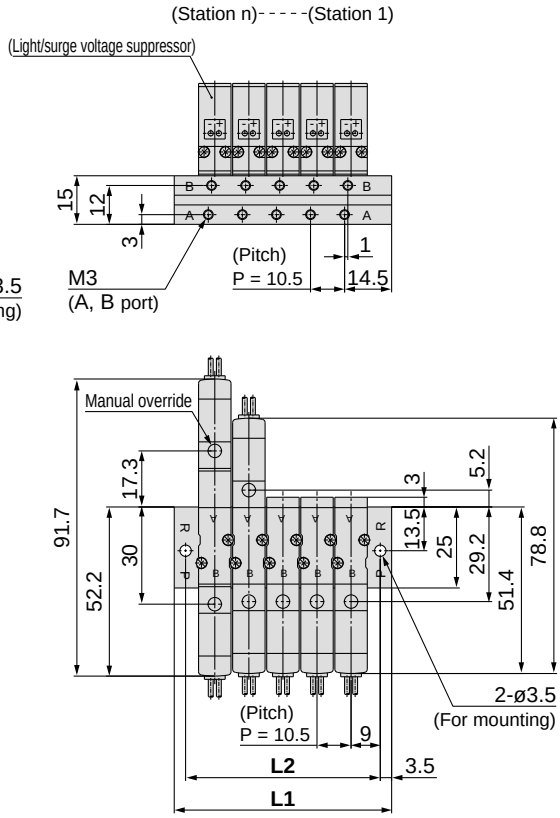
### Grommet (G)



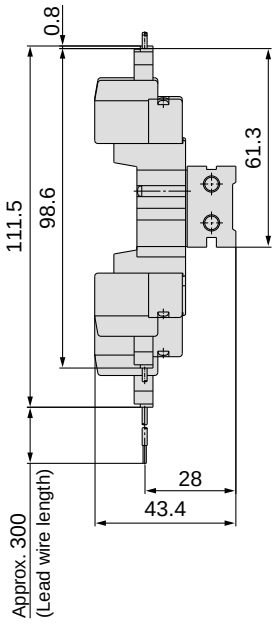

### Type S31 Manifold: Side Ported

Single solenoid coil is on same side as the A,B port.

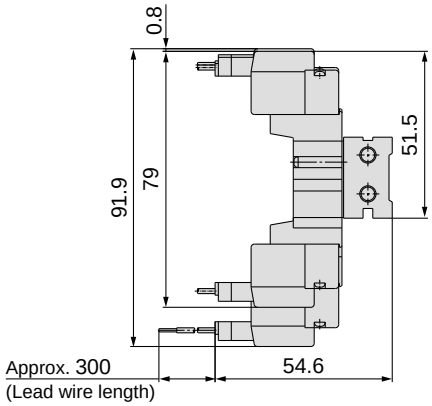
**SS5YJ3-S31-Stations-M3-Q**



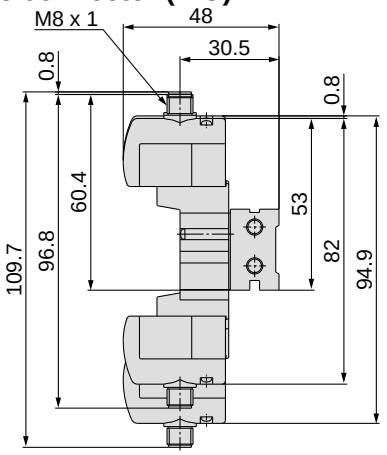

### L plug connector (L)




### M plug connector (M)




### M8 connector (WO)



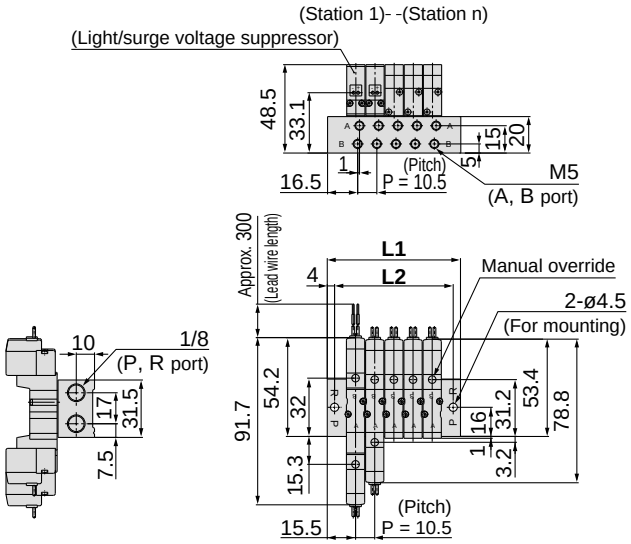

Refer to back page 11 for dimentions with connector cable.

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 35.5 | 46 | 56.5 | 67 | 77.5 | 88 | 98.5 | 109 | 119.5 | 130 | 140.5 | 151 | 161.5 | 172 | 182.5 | 193 | 203.5 | 214 | 224.5 |
| **L2** | 28.5 | 39 | 49.5 | 60 | 70.5 | 81 | 91.5 | 102 | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 |

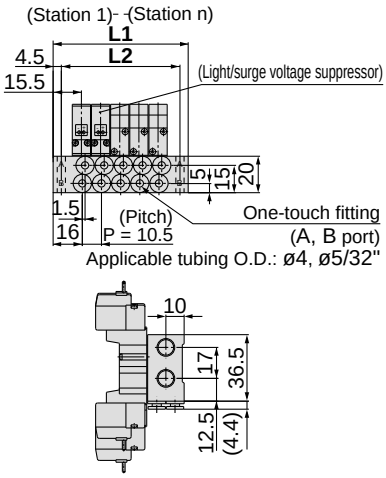
## Type 32 Manifold: Side Ported/SS5YJ3-32-[Stations]-M5, C4/N3□-Q

### Grommet (G)

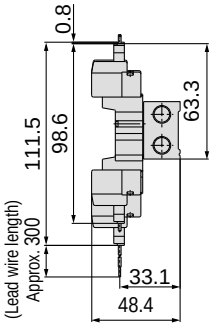
**For M5**



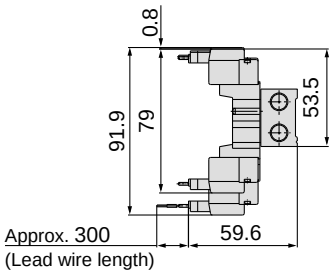

### For C4/N3□ (Built-in one-touch fitting)



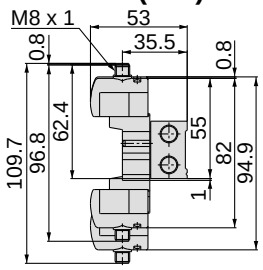

### L plug connector (L)




### M plug connector (M)



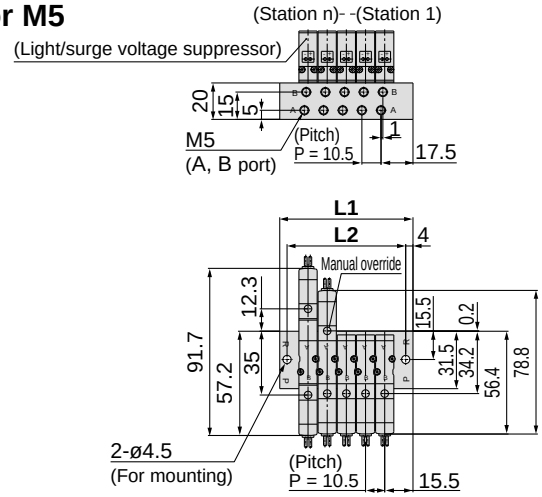

### M8 connector (WO)



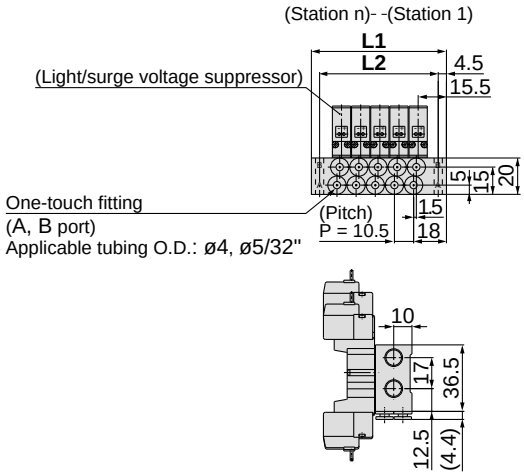

Refer to back page 11 for dimensions with connector cable.

## Type S32 Manifold: Side Ported (Single solenoid coil is on same side as the A,B port.) /SS5YJ3-S32-[Stations]-M5, C4/N3□-Q

### For M5




### For C4/N3□ (Built-in one-touch fitting)




### SS5YJ3-32, S32-[Stations]-M5-Q

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 41.5 | 52 | 62.5 | 73 | 83.5 | 94 | 104.5 | 115 | 125.5 | 136 | 146.5 | 157 | 167.5 | 178 | 188.5 | 199 | 209.5 | 220 | 230.5 |
| **L2** | 33.5 | 44 | 54.5 | 65 | 75.5 | 86 | 96.5 | 107 | 117.5 | 128 | 138.5 | 149 | 159.5 | 170 | 180.5 | 191 | 201.5 | 212 | 222.5 |

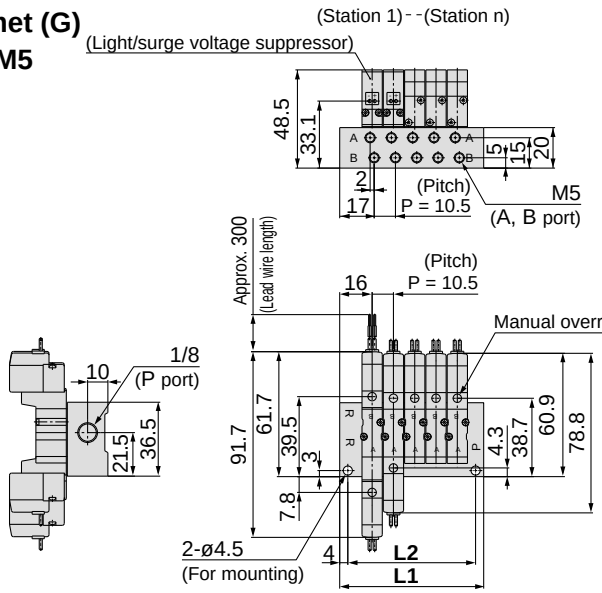
### SS5YJ3-32, S32-[Stations]-C4-Q

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 42.5 | 53 | 63.5 | 74 | 84.5 | 95 | 105.5 | 116 | 126.5 | 137 | 147.5 | 158 | 168.5 | 179 | 189.5 | 200 | 210.5 | 221 | 231.5 |
| **L2** | 33.5 | 44 | 54.5 | 65 | 75.5 | 86 | 96.5 | 107 | 117.5 | 128 | 138.5 | 149 | 159.5 | 170 | 180.5 | 191 | 201.5 | 212 | 222.5 |

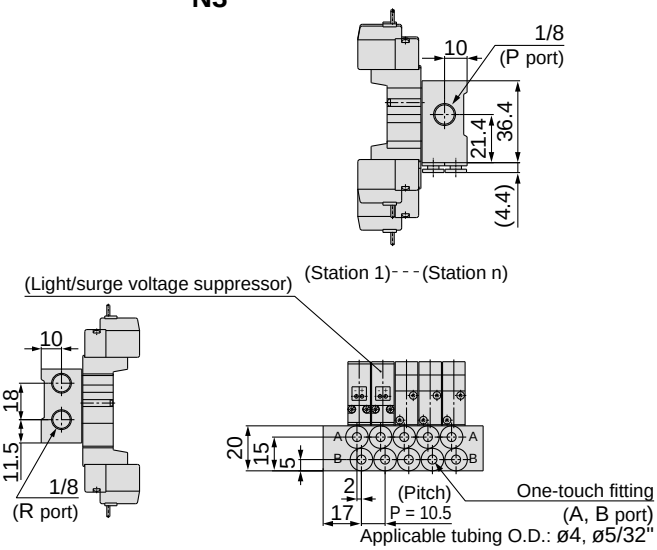
## Type 41 Manifold: Side Ported/SS5YJ3-41-[Stations]-M5, C4/N3□-Q

### Grommet (G)

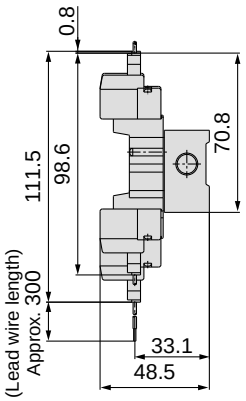
**For M5**



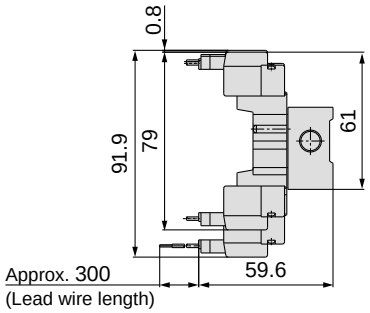

### For C4/N3□ (Built-in one-touch fitting)



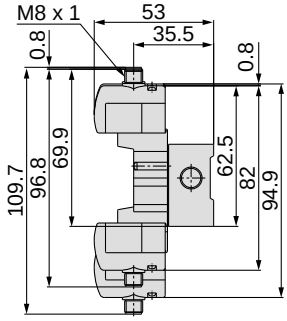

### L plug connector (L)




### M plug connector (M)



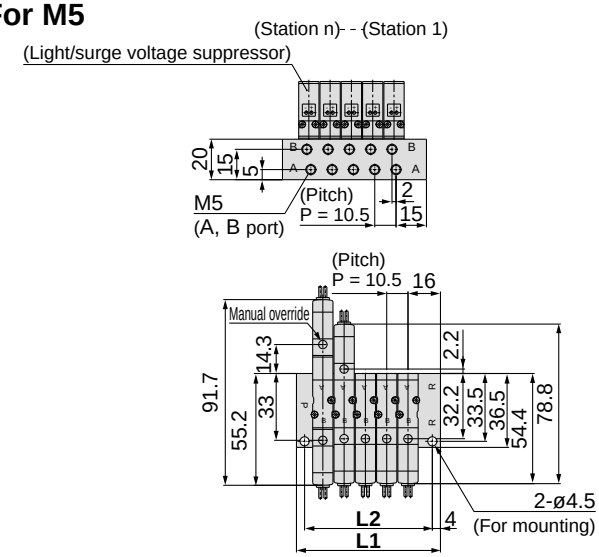

### M8 connector (WO)



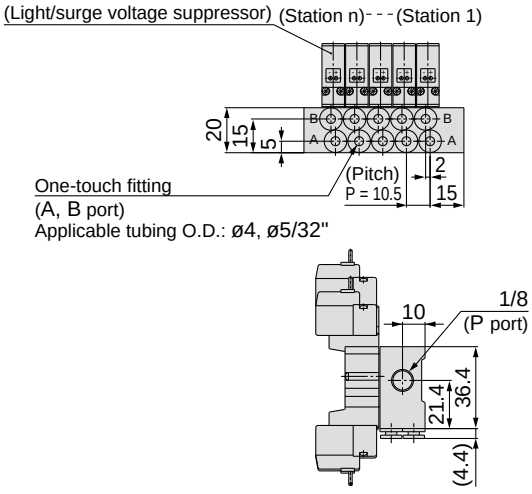

Refer to back page 11 for dimentions with connector cable.

## Type S41 Manifold: Side Ported (Single solenoid coil is on same side as the A,B port.)/SS5YJ3-S41-[Stations]-M5, C4/N3□-Q

### For M5



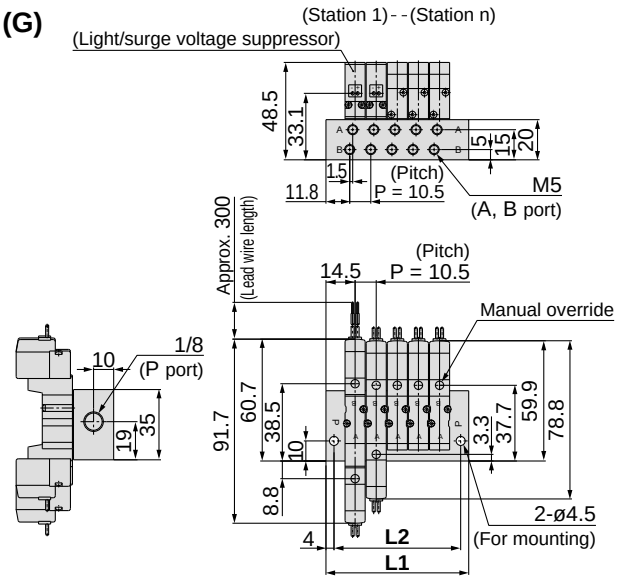

### For C4/N3□ (Built-in one-touch fitting)



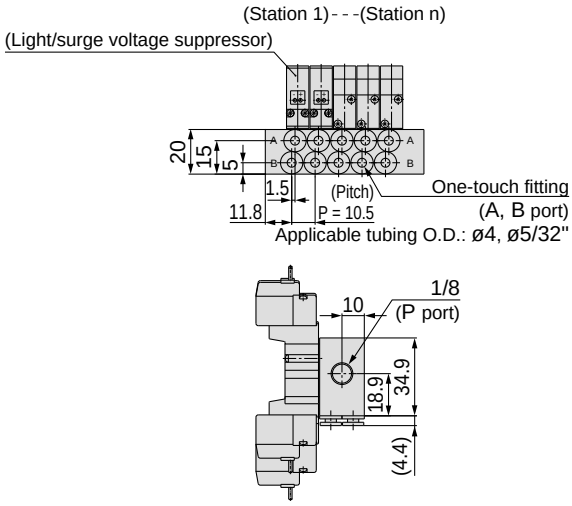

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 39.5 | 50 | 60.5 | 71 | 81.5 | 92 | 102.5 | 113 | 123.5 | 134 | 144.5 | 155 | 165.5 | 176 | 186.5 | 197 | 207.5 | 218 | 228.5 |
| **L2** | 31.5 | 42 | 52.5 | 63 | 73.5 | 84 | 94.5 | 105 | 115.5 | 126 | 136.5 | 147 | 157.5 | 168 | 178.5 | 189 | 199.5 | 210 | 220.5 |

## Type 46 Manifold: Side Ported/SS5YJ3-46-Stations-M5, C4/N3□-Q

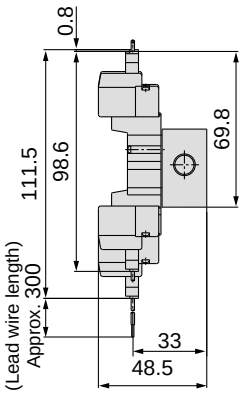
### Grommet (G)
For M5



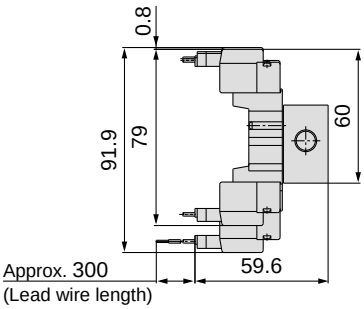

### For C4/N3□ (Built-in one-touch fitting)



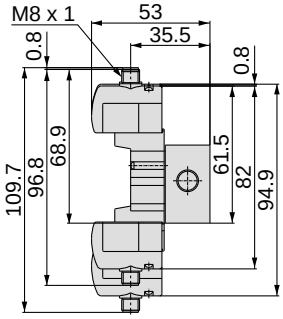

### L plug connector (L)




### M plug connector (M)



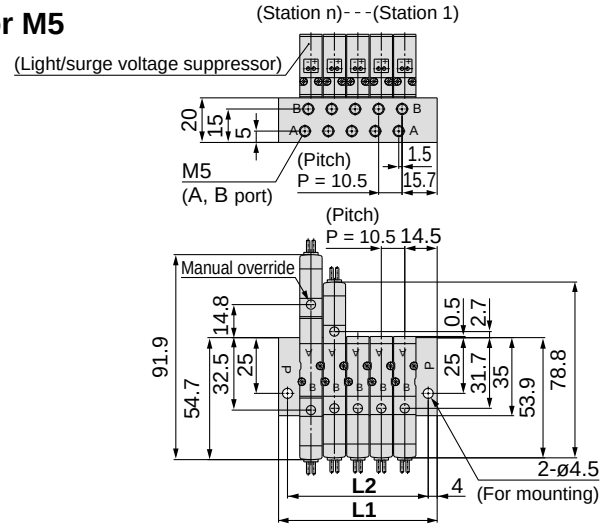

### M8 connector (WO)



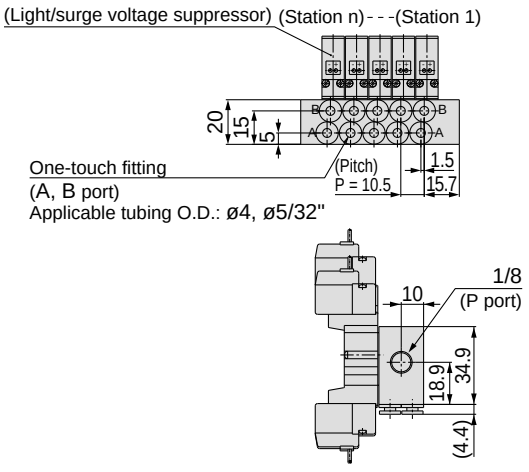

Refer to back page 11 for dimentions with connector cable.

## Type S46 Manifold: Side Ported (Single solenoid coil is on same side as the A,B port.)/SS5YJ3-S46-Stations-M5, C4/N3□-Q

### For M5



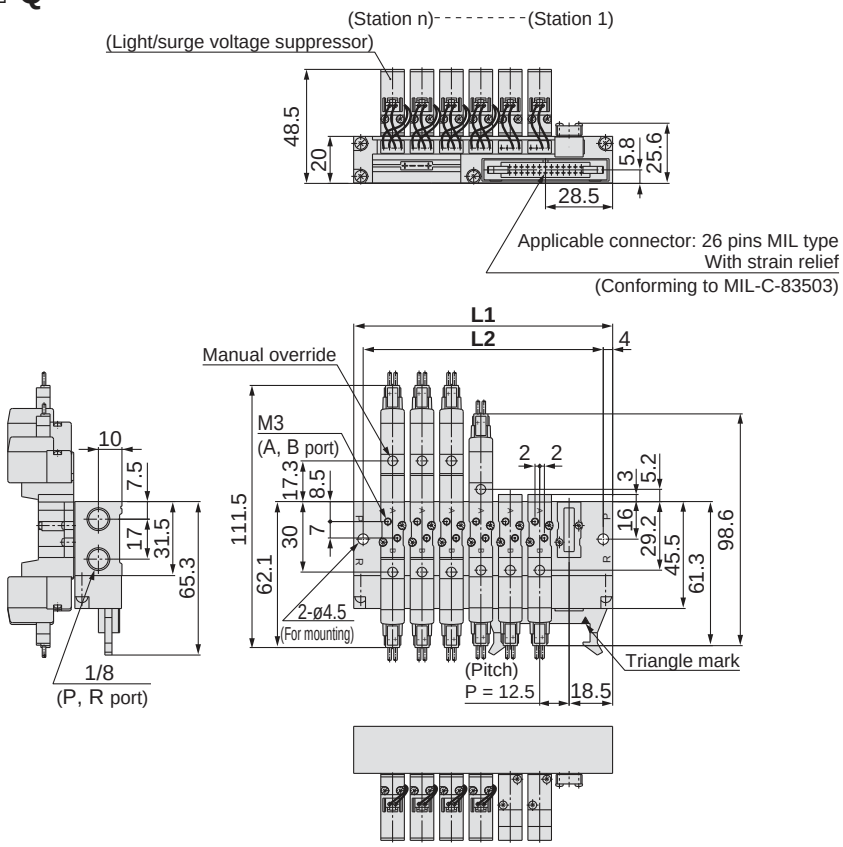

### For C4/N3□ (Built-in one-touch fitting)



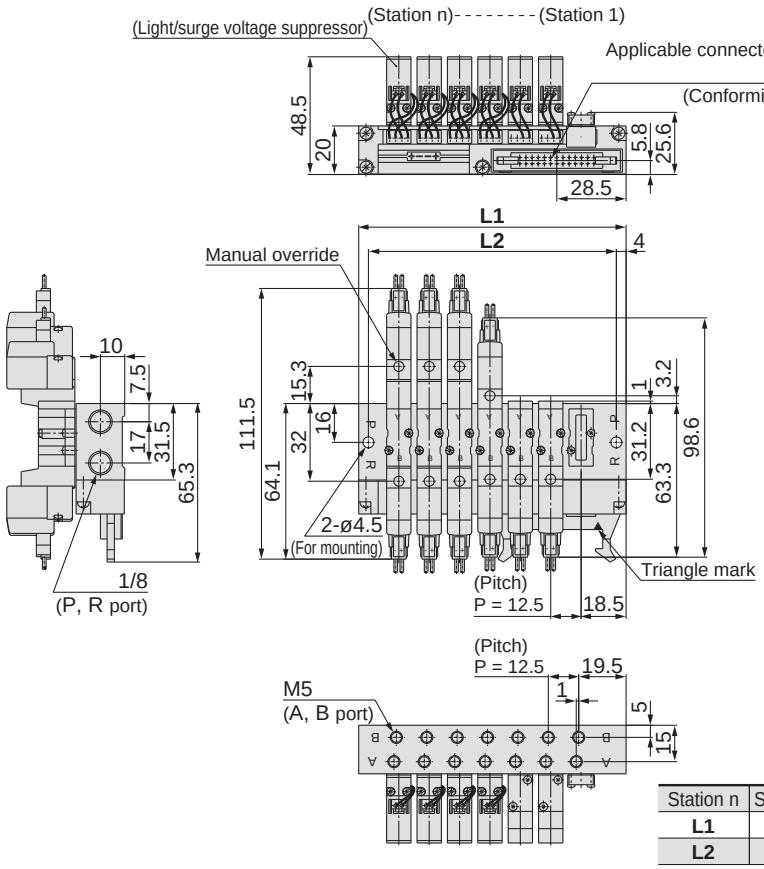

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 39.5 | 50 | 60.5 | 71 | 81.5 | 92 | 102.5 | 113 | 123.5 | 134 | 144.5 | 155 | 165.5 | 176 | 186.5 | 197 | 207.5 | 218 | 228.5 |
| **L2** | 31.5 | 42 | 52.5 | 63 | 73.5 | 84 | 94.5 | 105 | 115.5 | 126 | 136.5 | 147 | 157.5 | 168 | 178.5 | 189 | 199.5 | 210 | 220.5 |

## Flat Ribbon Cable Manifold

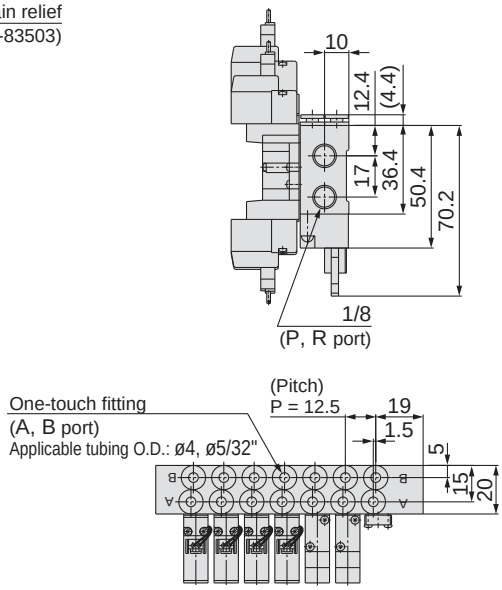
### SS5YJ3-21P-[Stations]-00□-Q




### SS5YJ3-32P-[Stations]-M5, C4/N3□-Q
### For M5

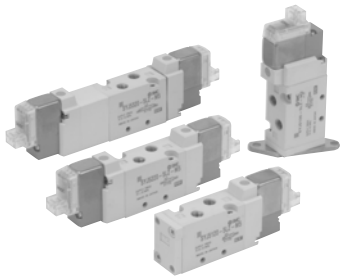



### For C4/N3□ (Built-in one-touch fitting)

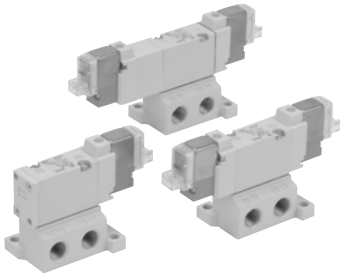



| Station n | Station 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Station 12 |
|---|---|---|---|---|---|---|---|---|---|
| **L1** | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 |
| **L2** | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 |

# Rubber Seal
## 5 Port Solenoid Valve
# Series SYJ5000



Body ported



Base mounted

## Specifications

For details about certified products conforming to international standards, visit us at www.smcworld.com.

| | | |
|---|---|---|
| **Fluid** | | Air |
| **Operating pressure range (MPa)** | **2 position single** | 0.15 to 0.7 |
| | **2 position double** | 0.1 to 0.7 |
| | **3 position** | 0.15 to 0.7 |
| **Ambient and fluid temperature (°C)** | | –10 to 50 (No freezing. Refer to back page 3.) |
| **Response time (ms)** Note 1) **(at 0.5 MPa)** | **2 position single, double** | 25 or less |
| | **3 position** | 40 or less |
| **Max. operating frequency (Hz)** | **2 position single, double** | 5 |
| | **3 position** | 3 |
| **Manual override (Manual operation)** | | Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type |
| **Pilot exhaust method** | | Individual exhaust for the pilot valve, Common exhaust for the pilot and main valve |
| **Lubrication** | | Not required |
| **Mounting orientation** | | Unrestricted |
| **Shock/Vibration resistance (m/s²)** Note 2) | | 150/30 |
| **Enclosure** | | Dust proof (∗ DIN terminal, M8 connector conforms to IP65.) |

∗ Based on IEC60529
Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)
Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised states every once for each condition. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

## Solenoid Specifications

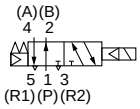
| | | | | |
|---|---|---|---|---|
| **Electrical entry** | | | Grommet (G), (H), L plug connector (L)<br>M plug connector: (M), DIN terminal (D)<br>M8 connector (W) | |
| | | | G, H, L, M, W | D |
| **Coil rated voltage (V)** | **DC** | | 24, 12, 6, 5, 3 | 24, 12 |
| | **AC 50/60 Hz** | | - | 100, 110, 200, 220 |
| **Allowable voltage fluctuation** | | | ±10% of rated voltage ∗ | |
| **Power consumption (W)** | **DC** | **Standard** | 0.35 {With light: 0.4 (DIN terminal with light: 0.45)} | |
| | | **With power saving circuit** | 0.1 (With light only) | |
| **Apparent power VA** ∗ | **AC** | **100 V** | - | 0.78 (With light: 0.87) |
| | | **110 V [115 V]** | - | 0.86 (With light: 0.97) [0.94 (With light: 1.07)] |
| | | **200 V** | - | 1.15 (With light: 1.30) |
| | | **220 V [230 V]** | - | 1.27 (With light: 1.46) [1.39 (With light: 1.60)] |
| **Surge voltage suppressor** | | | Diode (DIN terminal, Varistor when non-polar types) | |
| **Indicator light** | | | LED (Neon light when AC with DIN terminal) | |

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
∗ For 115 VDC and 230 VDC, the allowable voltage is –15% to +5% of rated voltage.
∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit. S and Z type: 24 VDC: –7% to +10%, 12 VDC: –4% to +10%
T type: 24 VDC: –8% to +10%, 12 VDC: –6% to +10%

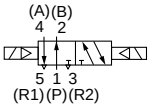
**JIS Symbol**

**Body ported**

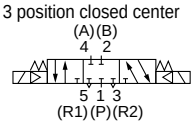
2 position single



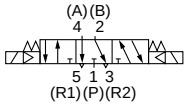

2 position double



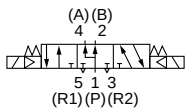

3 position closed center




3 position exhaust center

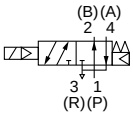



3 position pressure center

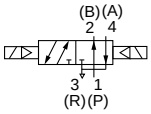



**Base mounted (with sub-plate)**

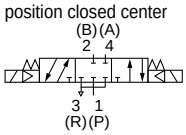
2 position single



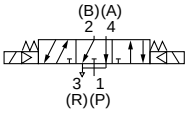

2 position double



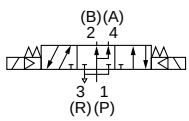

3 position closed center




3 position exhaust center




3 position pressure center



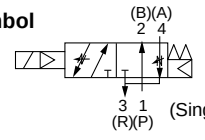

**Made to Order**
**(For details, refer to pages 78 through to 80.)**

## Built-in Speed Controller

### SYJ5□5□

- Built-in exhaust flow controls enable simple cylinder speed adjustments.
- When mounted on the manifold, the common exhaust discharges the pilot and main valve exhaust through a common EXH port to enable simple exhausting.

**JIS Symbol**

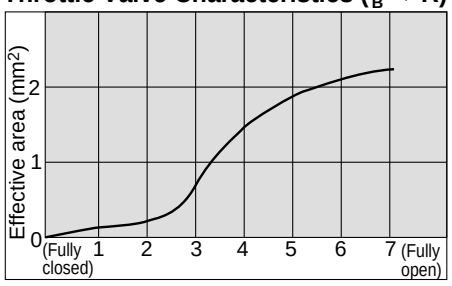



**How to order valve with built-in speed controller**

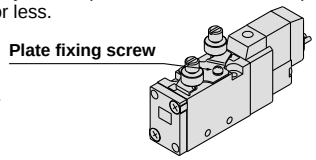
SYJ5□5□-□□□□-□-Q

- Type of actuation
- Body Option
- Rated voltage
- Lead wire
- Light/surge voltage suppressor
- Manual override
- Port size

**Throttle Valve Characteristics ($\frac{A}{B} \rightarrow R$)**




- When using SYJ5□53 model the speed controller must be opend more than 1 complete rotation from fully closed in order to function proerly.
- Adjust the speed controller with a torque of 0.3 N·m or less.




Note) Do not loosen plate fixing screw.

## Flow Characteristics/Weight

| Valve model | | Type of actuation | | Port size 1, 5, 3 (P, EA, EB) | Port size 4, 2 (A, B) | Flow characteristics Note 1) 1→4/2 (P→A/B) C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | 4/2→5/3 (A/B→EA/EB) C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | Weight (g) Note 2, 3) Grommet | L/M plug connector | DIN terminal | M8 connector |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Body ported | SYJ5□20-□-M5 | 2 position | Single | M5 | M5 x 0.8 | 0.47 | 0.41 | 0.13 | 129 | 0.47 | 0.41 | 0.13 | 129 | 46 | 47 | 68 | 51 |
| | | | Double | | | | | | | | | | | 64 | 66 | 108 | 74 |
| | | 3 position | Closed center | | | 0.49 | 0.44 | 0.13 | 137 | 0.44 | 0.40 | 0.12 | 120 | 75 | 77 | 119 | 85 |
| | | | Exhaust center | | | 0.46 | 0.37 | 0.12 | 123 | 0.47 [0.39] | 0.43 [0.35] | 0.13 [0.10] | 131 [102] | | | | |
| | | | Pressure center | | | 0.49 [0.39] | 0.51 [0.38] | 0.14 [0.10] | 145 [105] | 0.45 | 0.42 | 0.12 | 124 | | | | |
| | SYJ5□20-□-C4 | 2 position | Single | M5 | C4 (One-touch fitting for ø4) | 0.69 | 0.39 | 0.18 | 186 | 0.44 | 0.39 | 0.12 | 119 | 53 | 54 | 75 | 58 |
| | | | Double | | | | | | | | | | | 71 | 73 | 115 | 81 |
| | | 3 position | Closed center | | | 0.69 | 0.40 | 0.19 | 188 | 0.43 | 0.40 | 0.12 | 117 | 82 | 84 | 126 | 72 |
| | | | Exhaust center | | | 0.56 | 0.40 | 0.15 | 152 | 0.41 [0.41] | 0.37 [0.37] | 0.10 [0.11] | 109 [109] | | | | |
| | | | Pressure center | | | 0.57 [0.41] | 0.4 [0.37] | 0.15 [0.10] | 155 [109] | 0.41 | 0.37 | 0.10 | 109 | | | | |
| | SYJ5□20-□-C6 | 2 position | Single | M5 | C6 (One-touch fitting for ø6) | 0.70 | 0.36 | 0.19 | 185 | 0.47 | 0.40 | 0.12 | 128 | 53 | 54 | 75 | 58 |
| | | | Double | | | | | | | | | | | 71 | 73 | 115 | 81 |
| | | 3 position | Closed center | | | 0.72 | 0.37 | 0.19 | 192 | 0.44 | 0.34 | 0.12 | 115 | 82 | 84 | 126 | 92 |
| | | | Exhaust center | | | 0.67 | 0.54 | 0.19 | 204 | 0.41 [0.41] | 0.38 [0.38] | 0.11 [0.11] | 110 [110] | | | | |
| | | | Pressure center | | | 0.82 [0.44] | 0.41 [0.39] | 0.23 [0.12] | 225 [119] | 0.41 | 0.36 | 0.11 | 108 | | | | |
| Base mounted | SYJ5□40-□-01 | 2 position | Single | 1/8 | 1/8 | 0.79 | 0.21 | 0.19 | 190 | 0.83 | 0.32 | 0.21 | 214 | 80 (49) | 81 (47) | 102 (68) | 51 |
| | | | Double | | | | | | | | | | | 98 (64) | 100 (66) | 142 (108) | 74 |
| | | 3 position | Closed center | | | 0.80 | 0.28 | 0.18 | 201 | 0.86 | 0.34 | 0.20 | 224 | 109 (75) | 111 (77) | 153 (119) | 85 |
| | | | Exhaust center | | | 0.71 | 0.26 | 0.18 | 176 | 1.1 [0.60] | 0.24 [0.44] | 0.26 [0.18] | 270 [168] | | | | |
| | | | Pressure center | | | 0.99 [0.47] | 0.29 [0.38] | 0.24 [0.12] | 250 [126] | 0.72 | 0.38 | 0.18 | 193 | | | | |

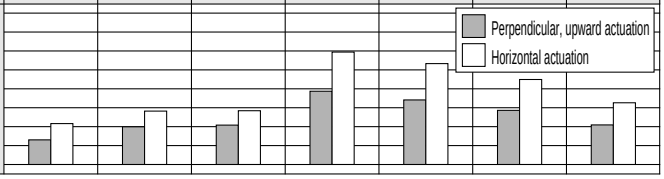
Note 1) [ ]: denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate.
Note 3) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

## Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

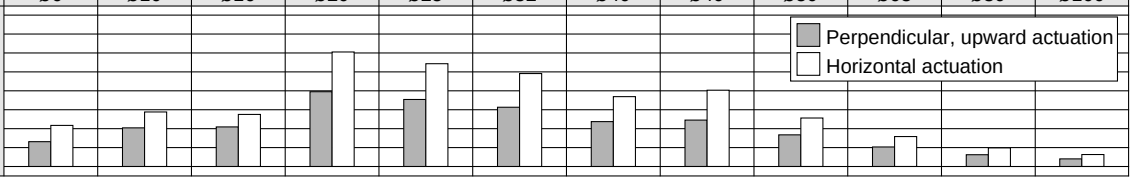
### Body Ported

| Series | Average speed (mm/s) | Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm | | | Series CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm | | | |
|---|---|---|---|---|---|---|---|---|
| | | ø6 | ø10 | ø16 | ø20 | ø25 | ø32 | ø40 |
| SYJ5120-M5 | 800 | | | | | | | |
| | 700 | | | | | | | |
| | 600 | | | | | | | |
| | 500 | | | | | | | |
| | 400 | | | | | | | |
| | 300 | | | | | | | |
| | 200 | | | | | | | |
| | 100 | | | | | | | |
| | 0 | | | | | | | |




### Base Mounted

| Series | Average speed (mm/s) | Bore size: Series CJ2 Pressure 0.5 MPa Load rate: 50% Stroke 60 mm | | | Series CM2 Pressure 0.5 MPa Load rate: 50% Stroke 300 mm | | | | Series MB/CA2 Pressure 0.5 MPa Load rate: 50% Stroke 500 mm | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ø6 | ø10 | ø16 | ø20 | ø25 | ø32 | ø40 | ø40 | ø50 | ø63 | ø80 | ø100 |
| SYJ5140-01 | 800 | | | | | | | | | | | | |
| | 700 | | | | | | | | | | | | |
| | 600 | | | | | | | | | | | | |
| | 500 | | | | | | | | | | | | |
| | 400 | | | | | | | | | | | | |
| | 300 | | | | | | | | | | | | |
| | 200 | | | | | | | | | | | | |
| | 100 | | | | | | | | | | | | |
| | 0 | | | | | | | | | | | | |




∗ Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
∗ Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
∗ Load factor: ( (Load weight x 9.8) /Theoretical force) x 100%

### Conditions

| Body ported | | Series CJ2 | Series CM2 | Series MB/CA2 |
|---|---|---|---|---|
| SYJ5120-M5 | Tubing bore x Length | ø4 x 1 m | ø6 x 1 m | ø8 x 1 m |
| | Speed controller | AS1301F-04 | AS3301F-06 | AS3301F-08 |
| | Silencer | AN120-M5 | AN110-01 | |

| Base mounted | | Series CJ2 | Series CM2 | Series MB/CA2 |
|---|---|---|---|---|
| SYJ5140-01 | Tubing bore x Length | ø4 x 1 m | ø6 x 1 m | |
| | Speed controller | AS2301F-04 | AS3001F-06 | |
| | Silencer | AN101-01 | AN101-01 | |

## How to Order

**Type of actuation**

| | |
|---|---|
| 1 | 2 position single solenoid |
| 2 | 2 position double solenoid |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |

**Light/surge voltage suppressor**

**Electrical entry for G, H, L, M, W**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppresor |
| Z | With light/surge voltage suppressor |
| R | With surge voltage suppressor (Non-polar type) |
| U | With light/surge voltage suppressor (Non-polar type) |

∗ Power saving circuit is only available in the "Z" type.

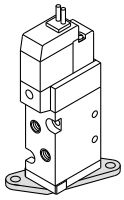
**Electrical entry for D**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppressor (Non-polar type) |
| Z | With light/surge voltage suppressor (Non-polar type) |

∗ DOZ is not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Bracket**

**-:** Without bracket
**F:** With bracket



Note) The mounting bracket is supplied unattached.

**Rated voltage**

| DC | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |

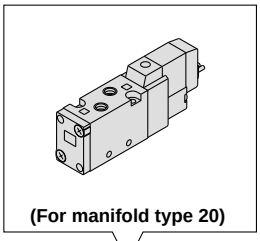
∗ DC specifications of type D and DO is only available with 12 and 24 VDC.

| AC (50/60 Hz) | |
|---|---|
| 1 | 100 VAC |
| 2 | 200 VAC |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

∗ AC specification is only available with D, DO type.

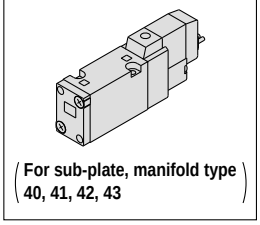
**A, B port size**

| | |
|---|---|
| M5 | M5 |
| C4 | One-touch fitting for ø4 |
| C6 | One-touch fitting for ø6 |
| N3 | One-touch fitting for ø5/32" |
| N7 | One-touch fitting for ø1/4" |



(For manifold type 20)

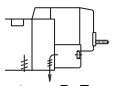
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Body ported** | SYJ5 | 1 | 2 | 0 | □ | 5 | L | □ | □ | M5 | □ | Q | |
| **Base mounted** | SYJ5 | 2 | 4 | 0 | □ | 5 | L | □ | □ | □ | □ | Q | |



(For sub-plate, manifold type 40, 41, 42, 43)

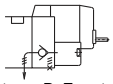
**Body option**

**0:** Pilot valve individual exhaust for the pilot valve



R port P, E port

**3:** Common exhaust type for main and pilot valve



R port P, E port

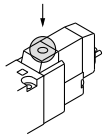
**Coil specifications**

| | |
|---|---|
| - | Standard |
| T | With power saving circuit <24 V, 12 VDC only> |

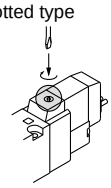
∗ Power saving circuit is not available in the case of D, DO or W□ type.

**Manual override**

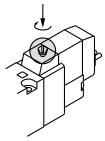
**-:** Non-locking push type



**D:** Push-turn locking slotted type



**E:** Push-turn locking lever type

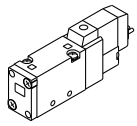


**Thread type**

| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

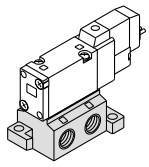
**Port size**

**Nil:** Without sub-plate

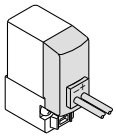
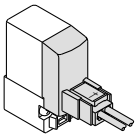
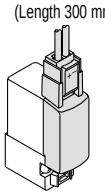
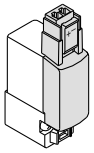
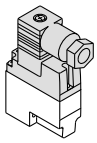
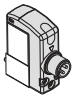
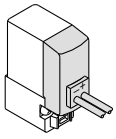
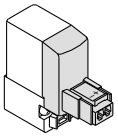
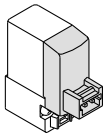
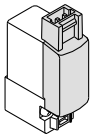
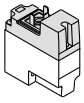
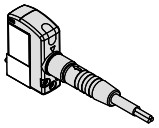


(With gasket and screws)

**01:** 1/8 With sub-plate



**Electrical entry**

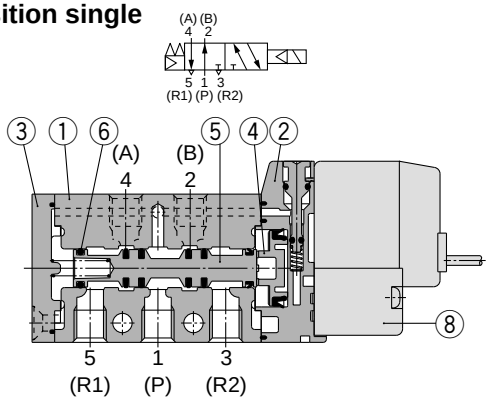
| 24, 12, 6, 5, 3 VDC | | | | 24,12 VDC 100,110, 200, 220 VAC | 24, 12, 6, 5, 3 VDC |
|---|---|---|---|---|---|
| Grommet | L plug connector | M plug connector | | DIN terminal | M8 connector ∗ |
| **G:** Lead wire length 300 mm | **L:** With lead wire (Length 300 mm) | **M:** With lead wire (Length 300 mm) | **MN:** Without lead wire | **D:** With connector | **WO:** Without connector cable |
|  |  |  |  |  |  |
| **H:** Lead wire length 600 mm | **LN:** Without lead wire | **LO:** Without connector | **MO:** Without connector | **DO:** Without connector | **W□:** With connector cable Note 1) |
|  |  |  |  |  |  |

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

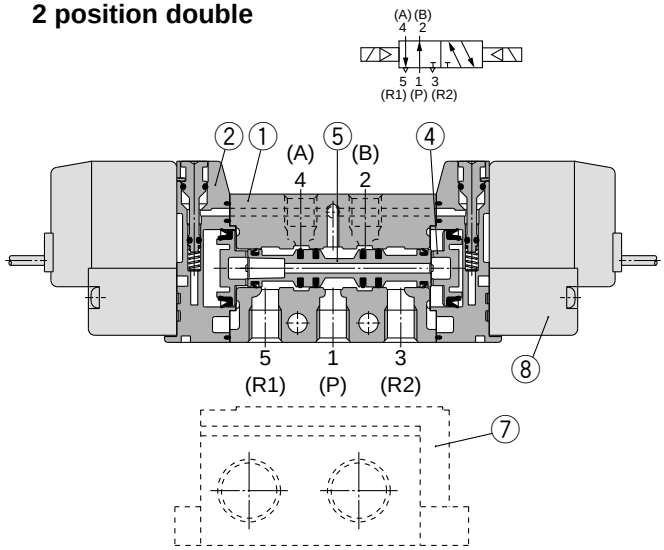
∗ LN, MN type: with 2 sockets.
∗ DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 79.
∗ For connector cable of M8 connector, refer to back page 10.
∗ Connector M8 type "WA" conforming to IEC 60947-5-2 standard, is also available. For details, see page 80.

## Construction

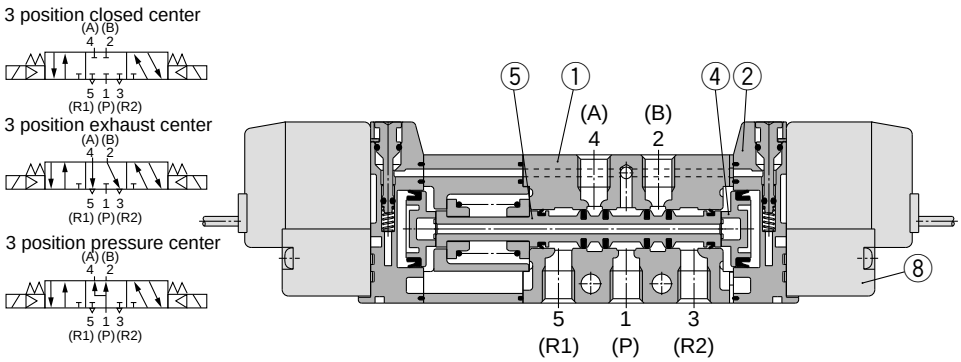
### 2 position single




### 2 position double




### 3 position closed center/exhaust center/pressure center




(This figure shows a closed center type.)

### Component Parts

| No. | Description | Material | Note |
|---|---|---|---|
| **1** | Body | Aluminum die-casted | White |
| **2** | Piston plate | Resin | White |
| **3** | End cover | Resin | White |
| **4** | Piston | Resin | □ |
| **5** | Spool valve assembly | Aluminum, H-NBR | □ |
| **6** | Spool spring | Stainless steel | □ |

### Replacement Parts

| No. | Description | No. | Note |
|---|---|---|---|
| **7** | Sub-plate | SYJ5000-22-1-Q | Aluminum die-casted |
| **8** | Pilot valve | V111(T)-□□□ | |
| **—** | Bracket assembly | SYJ5000-13-3A | |

## How to Order Pilot Valve Assembly

**V111 □ — 5 G □**

**Coil specifications**

| | |
|---|---|
| - | Standard |
| T | With power saving circuit (24, 12 VDC only) |

∗ Power saving circuit is not available in the case of W□ type.

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |

**Electrical entry**

| | | |
|---|---|---|
| G | Grommet, 300 mm lead wire | |
| H | Grommet, 600 mm lead wire | |
| L | L plug connector | With lead wire |
| LN | | Without lead wire |
| LO | | Without connector |
| M | M plug connector | With lead wire |
| MN | | Without lead wire |
| MO | | Without connector |
| WO | M8 connector | Without connector cable |
| W□ | | With connector cable Note 1) |

∗ For connector cable of M8 connector, refer to back page 10.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppresor |
| Z | With light/surge voltage suppressor |
| R | With surge voltage suppressor (Non-polar type) |
| U | With light/surge voltage suppressor (Non-polar type) |

∗ Power saving circuit is only available in the "Z" type.

## How to Order Connector Assembly for L/M Plug Connector

**For DC : SY100-30-4A- □**

**Without lead wire : SY100-30-A**
**(with connector and 2 of sockets only)**

**Lead wire length**

| | |
|---|---|
| - | 300 mm |
| 6 | 600 mm |
| 10 | 1000 mm |
| 15 | 1500 mm |
| 20 | 2000 mm |
| 25 | 2500 mm |
| 30 | 3000 mm |
| 50 | 5000 mm |

## How to Order M8 Connector Cable

**V100-49-1- □**

**Cable length**

| | |
|---|---|
| 1 | 300 mm |
| 2 | 500 mm |
| 3 | 1000 mm |
| 4 | 2000 mm |
| 7 | 5000 mm |

**V115 — 5 D □**

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| 1 | 100 VAC 50/60 Hz |
| 2 | 200 VAC 50/60 Hz |
| 3 | 110 VAC 50/60 Hz [115 VAC 50/60 Hz] |
| 4 | 220 VAC 50/60 Hz [230 VAC 50/60 Hz] |

∗ DC specifications of type D and DO is only available with 12 and 24 VDC.

∗ Power saving circuit is not available in the case of D or DO type.

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppressor (Non-polar type) |
| Z | With light/surge voltage suppressor (Non-polar type) |

∗ DOZ is not available.

∗ For AC voltage valves there is no “S” option. It is already built-in to the rectifier circuit.

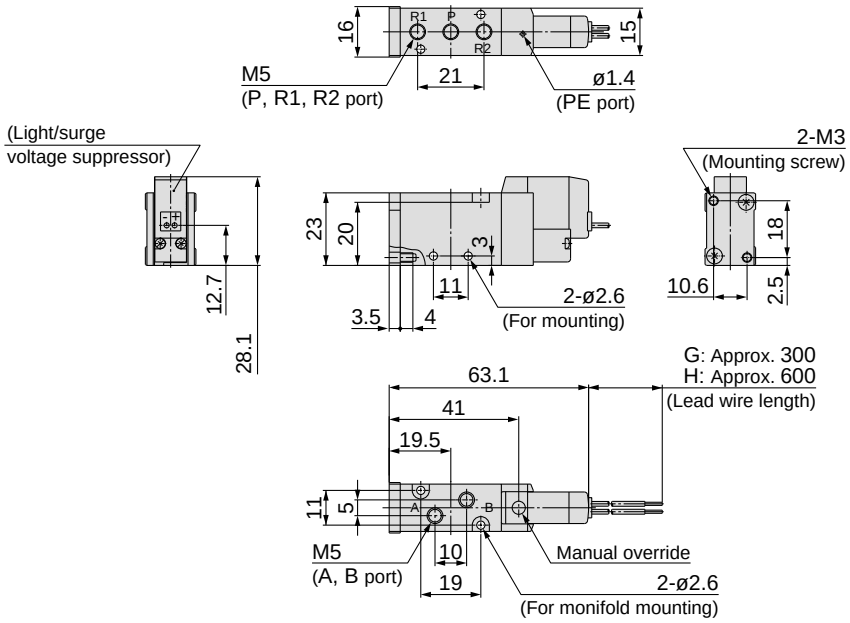
**Electrical entry**

| | | |
|---|---|---|
| D | DIN terminal | With connector |
| DO | | Without connector |

Note) Do not replace V111 (G, H, L, M, W) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

## 2 Position Single

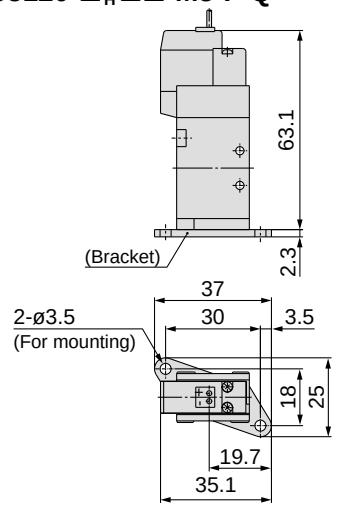
### Grommet (G), (H): SYJ5120-□$^{G}_{H}$□□-M5-Q



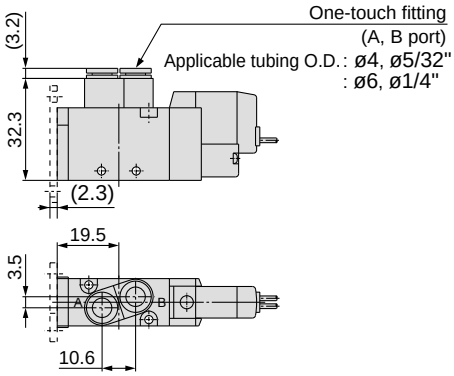




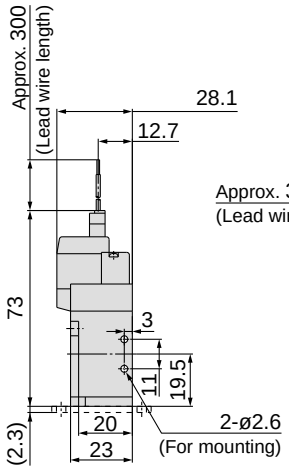
### With bracket
### SYJ5120-□$^{G}_{H}$□□-M5-F-Q



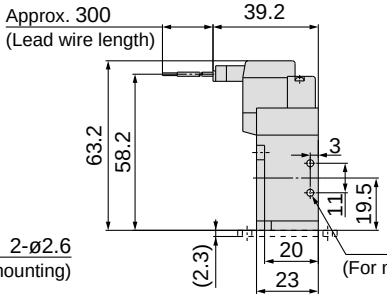

### Built-in one-touch fitting:
### SYJ5120-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$(-F)-Q



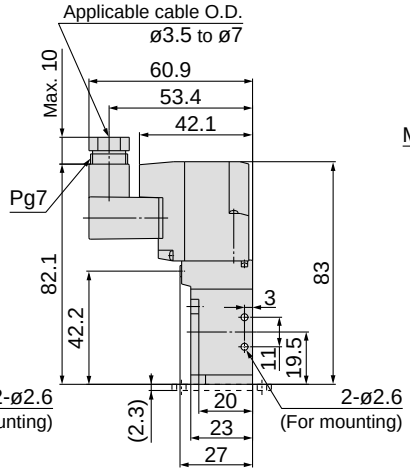

### L plug connector (L): SYJ5120-□L□□-M5(-F)-Q



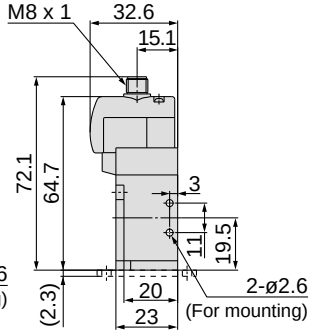

### M plug connector (M): SYJ5120-□M□□-M5(-F)-Q




### DIN terminal (D): SYJ5120-□D□□-M5(-F)-Q



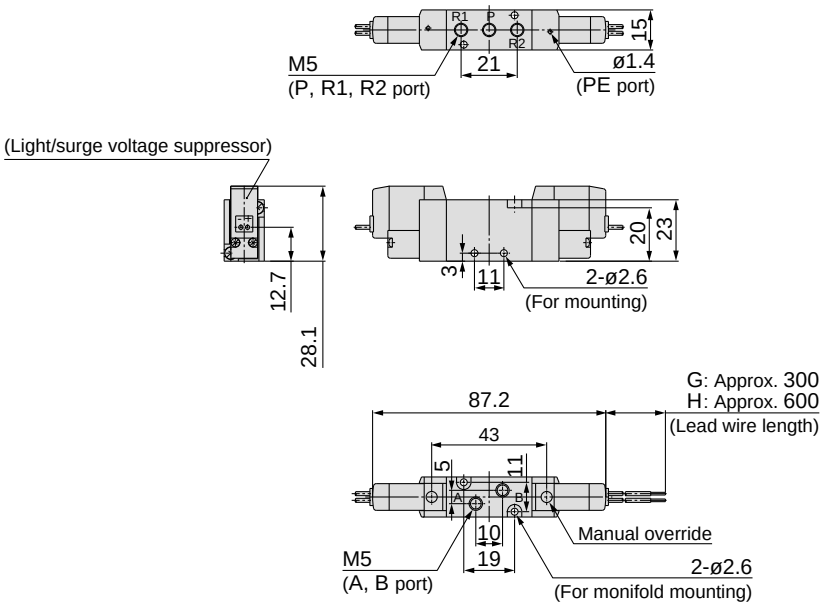

### M8 connector (WO): SYJ5120-□WO□□-M5(-F)-Q



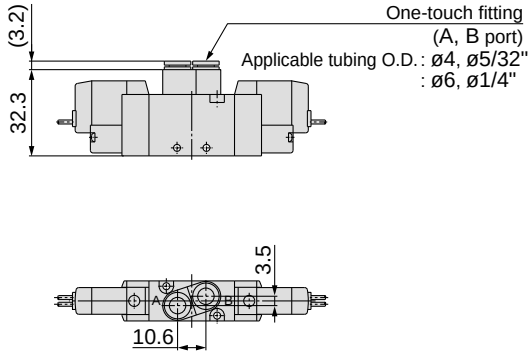

Refer to back page 11 for dimentions with connector cable.

## 2 Position Double

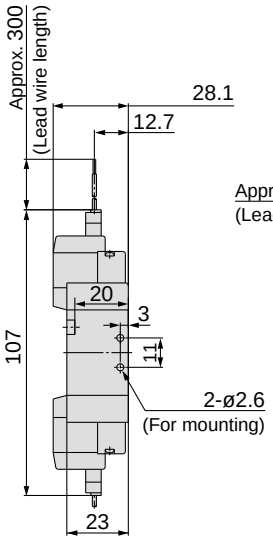
### Grommet (G), (H): SYJ5220-□$^{G}_{H}$□□-M5-Q



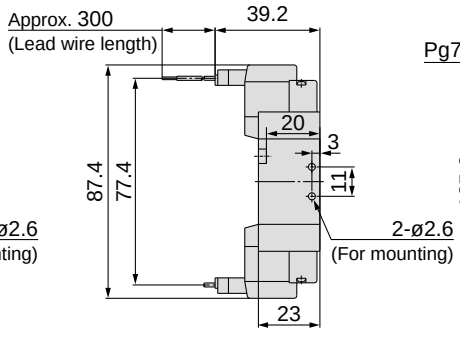

### Built-in one-touch fitting: SYJ5220-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$-Q



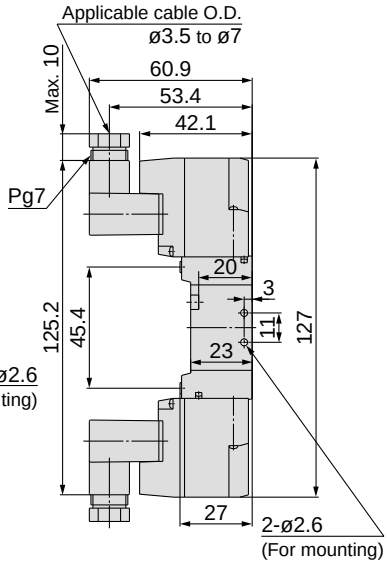

### L plug connector (L): SYJ5220-□L□□-M5-Q



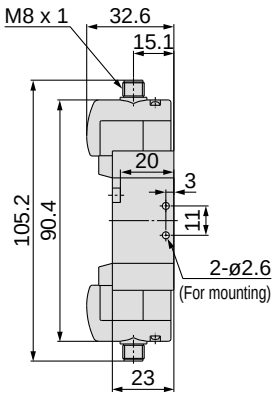

### M plug connector (M): SYJ5220-□M□□-M5-Q




### DIN terminal (D): SYJ5220-□D□□-M5-Q



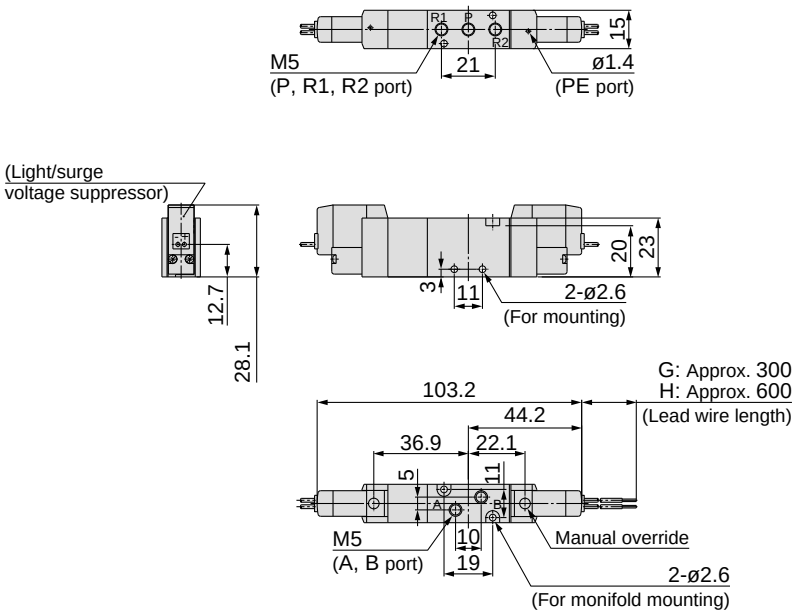

### M8 connector (WO): SYJ5220-□WO□□-M5-Q



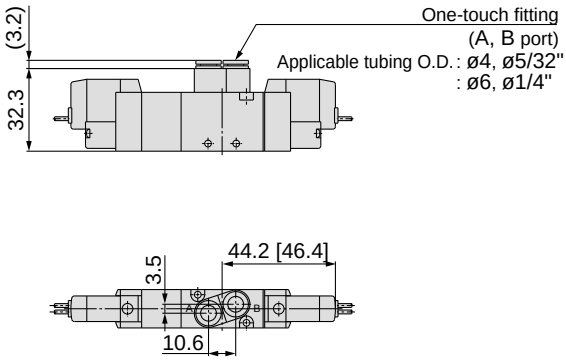

Refer to back page 11 for dimentions with connector cable.

## 3 Position Closed Center/Exhaust Center/Pressure Center

### Grommet (G), (H): SYJ5$^{3}_{4}_{5}$20-□$^{G}_{H}$□□-M5-Q




### Built-in one-touch fitting: SYJ5$^{3}_{4}_{5}$20-□$^{G}_{H}$□□-$^{C4, N3}_{C6, N7}$-Q

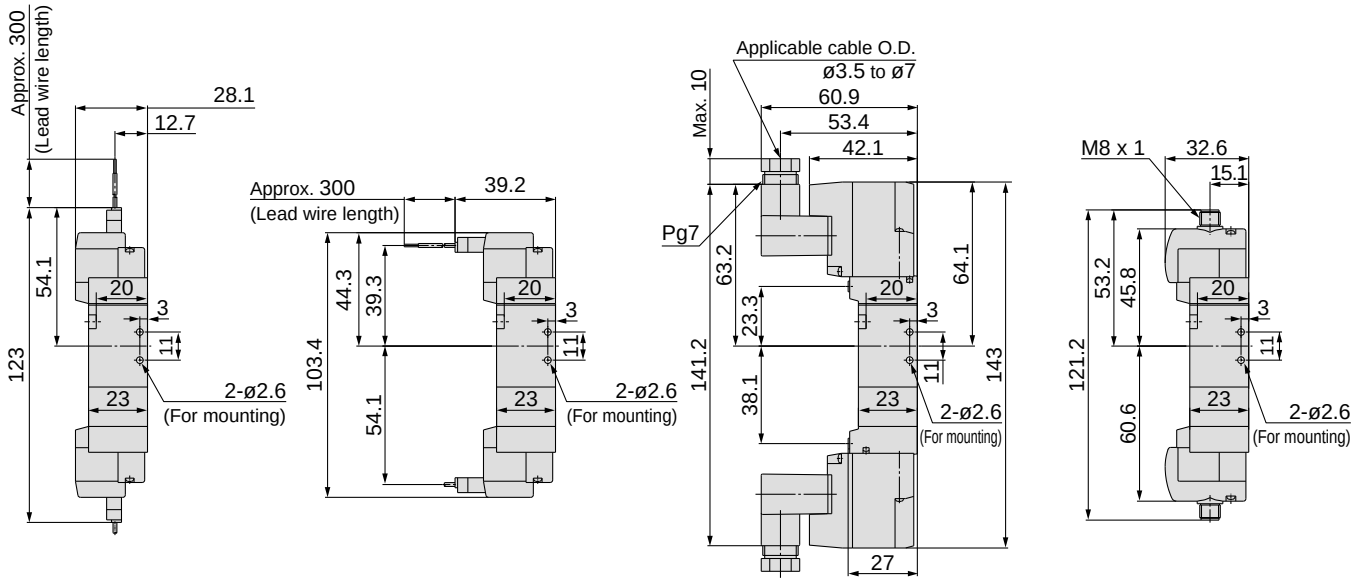



### L plug connector (L): SYJ5$^{3}_{4}_{5}$20-□L□□-M5-Q

### M plug connector (M): SYJ5$^{3}_{4}_{5}$20-□M□□-M5-Q

### DIN terminal (D): SYJ5$^{3}_{4}_{5}$20-□D□□-M5-Q

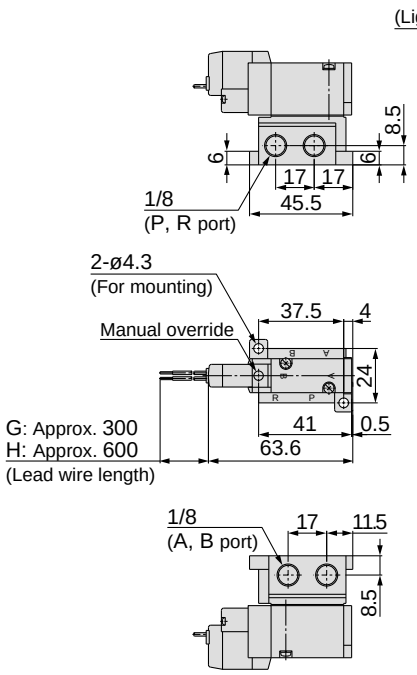
### M8 connector (WO): SYJ5$^{3}_{4}_{5}$20-□WO□□-M5-Q



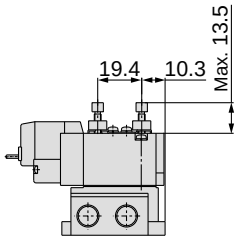

Refer to back page 11 for dimentions with connector cable.

## 2 Position Single

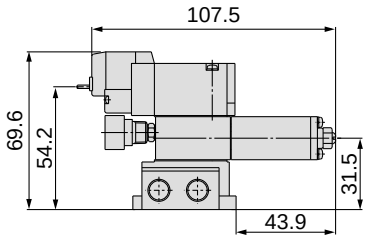
**Grommet (G), (H): SYJ5140-□$^{G}_{H}$□□-01□-Q**



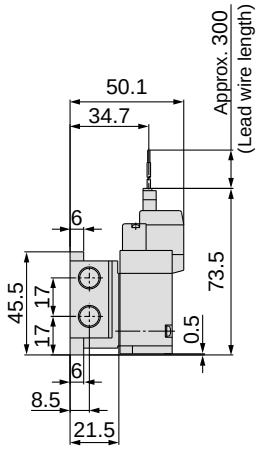

**Built-in speed controller: SYJ5150-□$^{G}_{H}$□□-01□-Q**



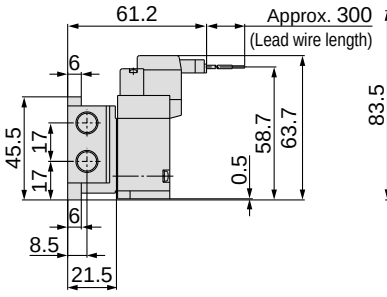

**With interface regulator**



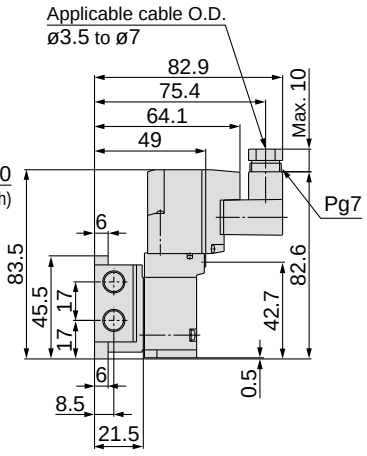

**L plug connector (L): SYJ5140-□L□□-01□-Q**



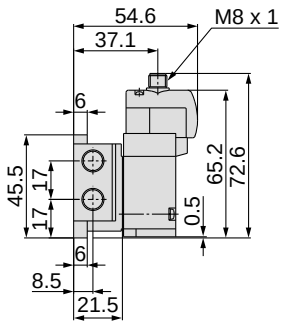

**M plug connector (M): SYJ5140-□M□□-01□-Q**




**DIN terminal (D): SYJ5140-□D□□-01□-Q**



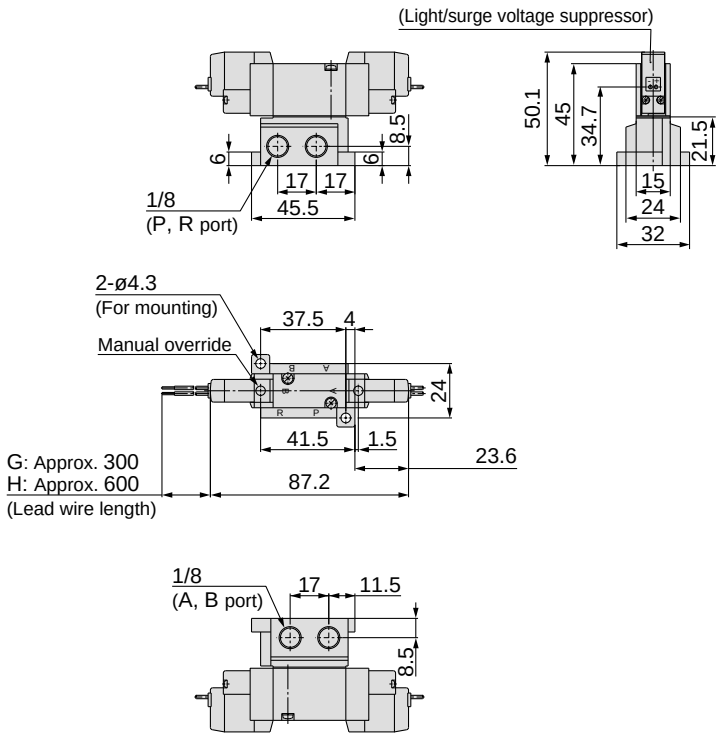

**M8 connector (WO): SYJ5140-□WO□□-01□-Q**



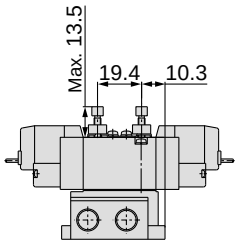

Refer to back page 11 for dimentions with connector cable.

## 2 Position Double

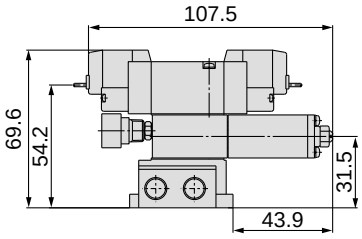
**Grommet (G), (H): SYJ5240-□$^{G}_{H}$□□-01□-Q**



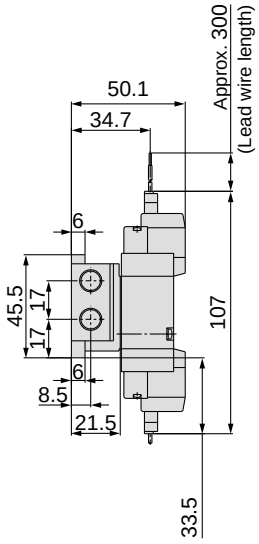

**Built-in speed controller: SYJ5250-□$^{G}_{H}$□□-01□-Q**



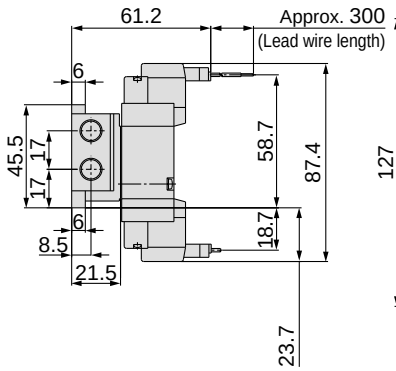

**With interface regulator**



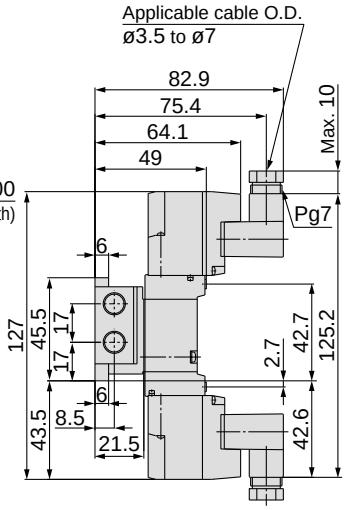

**L plug connector (L): SYJ5240-□L□□-01□-Q**



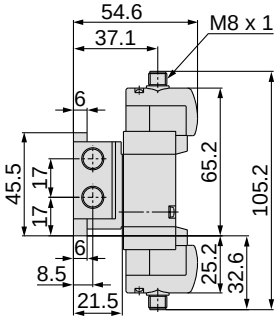

**M plug connector (M): SYJ5240-□M□□-01□-Q**




**DIN terminal (D): SYJ5240-□D□□-01□-Q**



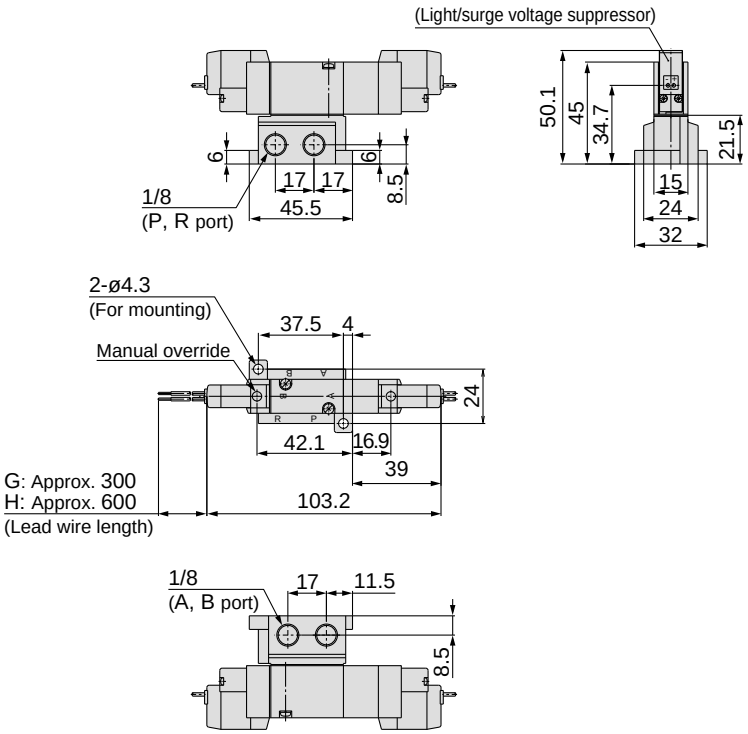

**M8 connector (WO): SYJ5240-□WO□□-01□-Q**



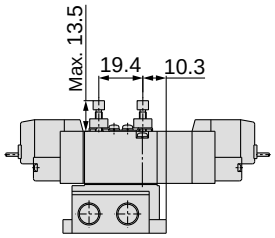

Refer to back page 11 for dimentions with connector cable.

## 3 Position Closed Center/Exhaust Center/Pressure Center

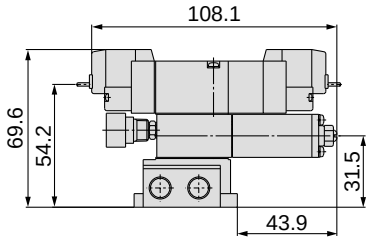
**Grommet (G), (H): SYJ5$^{3}_{4}_{5}$40-□$^{G}_{H}$□□-01□-Q**



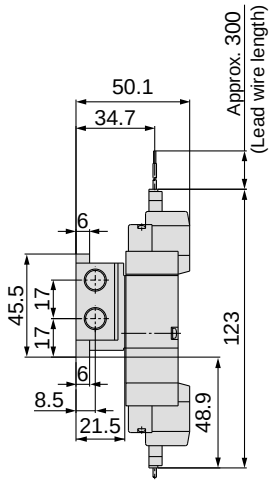

**Built-in speed controller: SYJ5$^{3}_{4}_{5}$50-□$^{G}_{H}$□□-01□-Q**



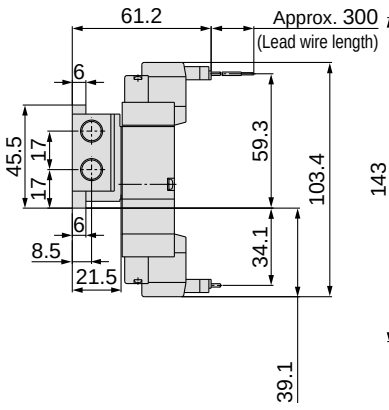

**With interface regulator**



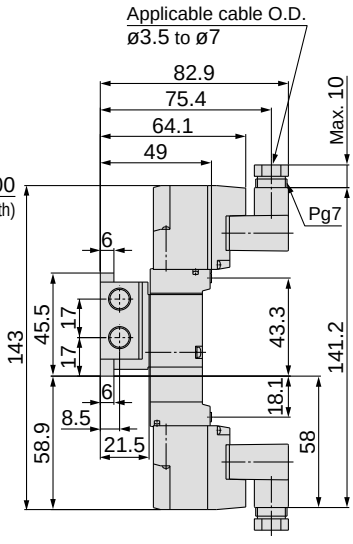

**L plug connector (L): SYJ5$^{3}_{4}_{5}$40-□L□□-01□-Q**



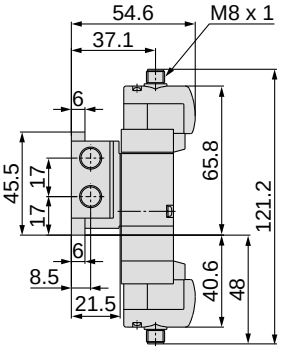

**M plug connector (M): SYJ5$^{3}_{4}_{5}$40-□M□□-01□-Q**




**DIN terminal (D): SYJ5$^{3}_{4}_{5}$40-□D□□-01□-Q**




**M8 connector (WO): SYJ5$^{3}_{4}_{5}$40-□WO□□-01□-Q**




Refer to back page 11 for dimentions with connector cable.

# *Series* ***SYJ5000***
# Manifold Specifications

## Manifold Standard

### Manifold Specifications

| Model | | Type 20 | Type 40 | Type 41 | Type 42 | Type 43 |
|---|---|---|---|---|---|---|
| Manifold type | | Single base/B mount | | | | |
| P (SUP), R (EXH) | | Common SUP, Common EXH | | | | |
| Valve stations | | 2 to 20 stations | | | | |
| A, B port Porting specifications | Location | Valve | Base | Base | | |
| | Direction | Top | Bottom | Side | | |
| Port size | P, R port | 1/8 | | | 1/4 | 1/8 |
| | A, B port | M5, C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) | M5 | | 1/8, C6 (One-touch fitting for ø6) | C4 (One-touch fitting for ø4) |

### Flow Characteristics

| Manifold | | | Port size | | Flow characteristics | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1→4/2 (P→A/B) | | | | 4/2→5/3 (A/B→R) | | | |
| | | | 1(P), 5/3(R) Port | 2(B), 4(A) Port | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* |
| Body ported for internal pilot | Type SS5YJ5-20 | SYJ5□2□ | 1/8 | M5 | 0.46 | 0.39 | 0.12 | 124 | 0.75 | 0.32 | 0.19 | 193 |
| | | | 1/8 | C4 | 0.62 | 0.33 | 0.16 | 161 | 0.83 | 0.27 | 0.20 | 207 |
| | | | 1/8 | C6 | 0.79 | 0.36 | 0.21 | 209 | 0.91 | 0.36 | 0.24 | 241 |
| Base mounted for internal pilot | Type SS5YJ5-40 | SYJ5□4□ | 1/8 | M5 | 0.55 | 0.35 | 0.15 | 144 | 0.64 | 0.26 | 0.16 | 159 |
| | Type SS5YJ5-41 | | 1/8 | M5 | 0.59 | 0.35 | 0.16 | 155 | 0.68 | 0.23 | 0.17 | 166 |
| | Type SS5YJ5-42-01 | | 1/4 | 1/8 | 0.74 | 0.22 | 0.18 | 179 | 0.82 | 0.31 | 0.21 | 210 |
| | Type SS5YJ5-42-C6 | | 1/4 | C6 | 0.71 | 0.24 | 0.17 | 174 | 0.8 | 0.29 | 0.20 | 202 |
| | Type SS5YJ5-43 | | 1/8 | C4 | 0.55 | 0.29 | 0.14 | 139 | 0.74 | 0.32 | 0.19 | 191 |

Note) Value at manifold base mounted, 2 position single operating
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

### How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example: **SS5YJ5-20-03-Q** ····· 1 pc. (Manifold base)
∗ **SYJ5120-5G-M5-Q** ····· 2 pcs. (Valve)
∗ **SYJ5000-21-4A-Q** ····· 1 pc. (Blanking plate assembly)

**SS5YJ5-43-03-C4-Q** ····· 1 pc. (Manifold base)
∗ **SYJ5140-5LZ-Q** ····· 1 pc. (Valve)
∗ **SYJ5240-5LZ-Q** ····· 1 pc. (Valve)
∗ **SYJ5000-21-4A-Q** ····· 1 pc. (Blanking plate assembly)

└→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

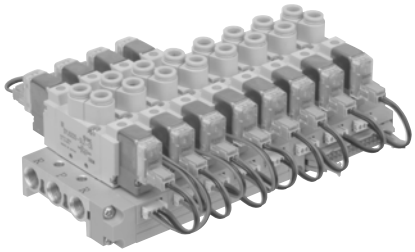
∗ Use manifold specification sheet.

## Flat Ribbon Cable Manifold

- **Multiple valve wiring is simplified through the use of the flat cable connector.**

- **Clean appearance**

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



## Flat Ribbon Cable Manifold Specifications

| Model | | Type 20 | Type 41P | Type 43P |
|---|---|---|---|---|
| Manifold type | | Single base/B mount | | |
| P (SUP), R (EXH) | | Common SUP, Common EXH | | |
| Valve stations | | 3 to 12 stations | | |
| A, B port Porting specifications | Location | Valve | Base | |
| | Direction | Top | Side | |
| Port size | P, R port | 1/8 | 1/8 | |
| | A, B port | M5, C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) | M5 | C4 (One-touch fitting for ø4) |
| Applicable flat ribbon cable connector | | Socket: 26 pins MIL type with strain relief (MIL-C-83503) | | |
| Internal wiring | | In common between +COM and –COM (Z type: +COM only). | | |
| Rated voltage | | 24, 12 VDC | | |

Note) The withstand voltage specification for the wiring unit section conforms to JIS C 0704, Grade 1 or its equivalent.

## Flow Characteristics

| Manifold | | | Port size | | Flow characteristics 1→4/2 (P→A/B) | | | | Flow characteristics 4/2→5/3 (A/B→R) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1(P), 5/3(R) Port | 2(B), 4(A) Port | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* |
| Body ported for internal pilot | Type SS5YJ5-20P | SYJ5□23 | 1/8 | M5 | 0.46 | 0.39 | 0.12 | 124 | 0.75 | 0.32 | 0.19 | 193 |
| | | | 1/8 | C4 | 0.62 | 0.33 | 0.16 | 161 | 0.83 | 0.27 | 0.20 | 207 |
| | | | 1/8 | C6 | 0.79 | 0.36 | 0.21 | 209 | 0.91 | 0.36 | 0.24 | 241 |
| Base mounted for internal pilot | Type SS5YJ5-41P Type SS5YJ5-43P | SYJ5□43 | 1/8 | M5 | 0.59 | 0.35 | 0.16 | 155 | 0.68 | 0.23 | 0.17 | 166 |
| | | | 1/8 | C4 | 0.55 | 0.29 | 0.14 | 139 | 0.74 | 0.32 | 0.19 | 191 |

Note) Value at manifold base mounted, 2 position single operating
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

## How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example:
- **SS5YJ5-41P-07-C4-Q** ……1 pc. (Manifold base)
- ∗ **SYJ5143-5LOU-Q** ……3 pcs. (Valve)
- ∗ **SYJ5243-5LOU-Q** ……3 pcs. (Valve)
- ∗ **SYJ5000-21-3A-Q** ……1 pc. (Blanking plate assembly)
- ∗ **SY3000-37-28A-Q** ……3 pcs. (Connector assembly)
- ∗ **SY3000-37-29A-Q** ……3 pcs. (Connector assembly)

→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

## How to Order Valve

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

**Light/surge voltage suppressor**

| | |
|---|---|
| Z | With light/surge voltage suppressor |
| U | With light/surge voltage suppressor(Non-polar type) |

Note) Z: Positive common specifications only.

**For DC** SYJ5 [1 / 2 / 4] 3 — [5] LO [Z] [ ] — [ ] — Q

**Type of actuation**

| | |
|---|---|
| 1 | 2 position single |
| 2 | 2 position double |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |

**Manual override**

| | |
|---|---|
| - | Non-locking push type |
| D | Push-turn locking slotted type |
| E | Push-turn locking lever type |

**A, B port size**

| Symbol | Port size |
|---|---|
| - | Base mounted |
| M5 | M5 |
| C4 | One-touch fitting for ø4 |
| C6 | One-touch fitting for ø6 |
| N3 | One-touch fitting for ø5/32" |
| N7 | One-touch fitting for ø1/4" |

## How to Order Connector Assembly

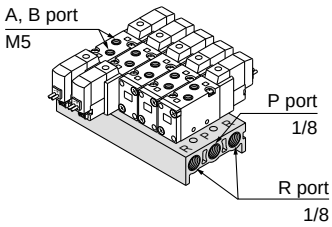
**For 12, 24 VDC**

| | |
|---|---|
| Single solenoid | SY3000-37-28A |
| Double solenoid, 3 position type | SY3000-37-29A |
| Single solenoid, individual SUP, EXH spacer | SY3000-37-3A |
| Double solenoid, 3 position individual SUP/EXH spacer | SY3000-37-4A |
| Interface regulator for single solenoid | SY3000-37-3A |
| Double solenoid, 3 position interface regulator | SY3000-37-6A |
| 3 port adaptor plate | SY3000-37-3A |

## Common SUP/Common EXH

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

### Type 20 (5 Port/Body ported)




**How to Order**

**SS5YJ5–20– 05 – [ ] -Q**

**Number of stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

**P, R port thread type**

| | |
|---|---|
| **-** | Rc |
| **00F** | G |
| **00N** | NPT |
| **00T** | NPTF |

**Applicable solenoid valve**

SYJ5□20-□□□□-M5/C4/C6-Q

SYJ5□23-□□□□-M5/C4/C6-Q

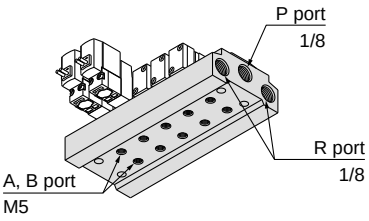
**Applicable blanking plate assembly**

SYJ5000-21-4A-Q

**Applicable individual EXH spacer assembly**

SYJ5000-17-1A-Q

### Type 40 (5 Port/Base mounted)




**How to Order**

**SS5YJ5– 40– 05 – M5 [ ] -Q**

**Stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

**P, R port thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

**A, B port size**

| | |
|---|---|
| **M5** | M5 |

**Applicable solenoid valve**

SYJ5□40-□□□□-Q

SYJ5□43-□□□□-Q

SYJ5□50-□□□□-Q

SYJ5□53-□□□□-Q

**Applicable blanking plate assembly**

SYJ5000-21-1A-2-Q

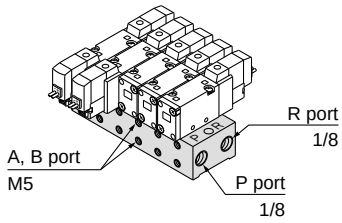
**Applicable individual EXH spacer assembly**

SYJ5000-17-1A-2-Q

**Applicable interface regulator**

ARBYJ5000-00-P-Q

### Type 41 (5 Port/Base mounted)




**How to Order**

**SS5YJ5– 41– 05 –M5 [ ] -Q**

**Stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

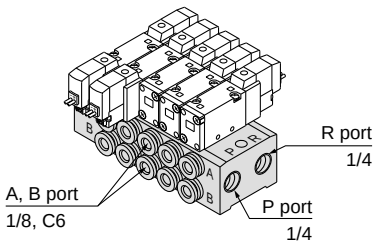
**P, R port thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

**A, B port size**

| | |
|---|---|
| **M5** | M5 |

### Type 42 (5 Port/Base mounted)




**How to Order**

**SS5YJ5– 42– 05 –C6 [ ] -Q**

**Stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

**A, B port size**

| | |
|---|---|
| **01** | 1/8 |
| **C6** | One-touch fitting for ø6 |
| **N7** | One-touch fitting for ø1/4" |

**Thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

**Applicable solenoid valve**

SYJ5□40-□□□□-Q

SYJ5□43-□□□□-Q

SYJ5□50-□□□□-Q

SYJ5□53-□□□□-Q

**Applicable blanking plate assembly**

SYJ5000-21-1A-2-Q

**Applicable individual EXH spacer assembly**

SYJ5000-17-1A-2-Q

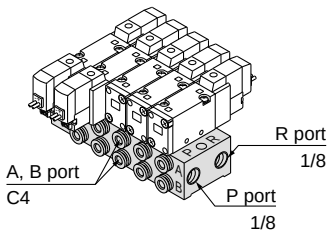
**Applicable individual SUP spacer assembly**

SYJ5000-16-2A-Q

**Applicable interface regulator**

ARBYJ5000-00-P-Q

### Type 43 (5 Port/Base mounted)




**How to Order**

**SS5YJ5– 43– 05 – C4 [ ] -Q**

**Stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

**A, B port size**

| | |
|---|---|
| **C4** | One-touch fitting for ø4 |
| **N3** | One-touch fitting for ø5/32" |

**P, R port thread type**

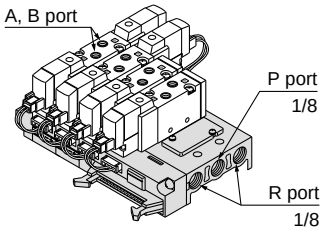
| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

## Flat Ribbon Cable Manifold

## Common SUP/Common EXH

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

### Type 20 (5 Port/Body ported)




**How to Order**

**SS5YJ5–20P– 05 – [ ] -Q**

**Number of stations**

| | |
|---|---|
| **03** | 3 stations |
| **:** | : |
| **12** | 12 stations |

**P, R port thread type**

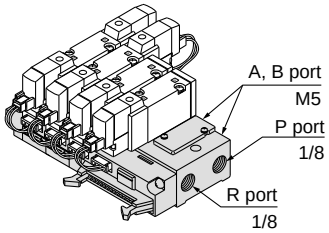
| | |
|---|---|
| **-** | Rc |
| **00F** | G |
| **00N** | NPT |
| **00T** | NPTF |

**Applicable solenoid valve**
**Refer to page 35.**

**Applicable blanking plate assembly**
SYJ5000-21-3A-1-Q

**Applicable connector assembly**
**Refer to page 35.**

### Type 41P (5 Port/Base mounted)




**How to Order**

**SS5YJ5–41P– 05 –M5 [ ] -Q**

**Number of stations**

| | |
|---|---|
| **03** | 3 stations |
| **:** | : |
| **12** | 12 stations |

**P, R port thread type**

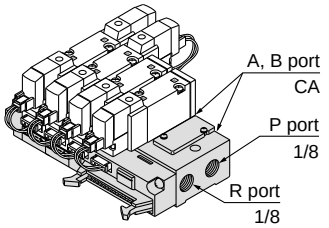
| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

**Applicable solenoid valve**
**Refer to page 35.**

**Applicable blanking plate assembly**
SYJ5000-21-3A-2-Q

**Applicable connector assembly**
**Refer to page 35.**

### Type 43P (5 Port/Base mounted)




**How to Order**

**SS5YJ5–43P– 05 – C4 [ ] -Q**

**Number of stations**

| | |
|---|---|
| **03** | 3 stations |
| **:** | : |
| **12** | 12 stations |

**A, B port size**

| | |
|---|---|
| **C4** | One-touch fitting for ø4 |
| **N3** | One-touch fitting for ø5/32" |

**P, R port thread type**

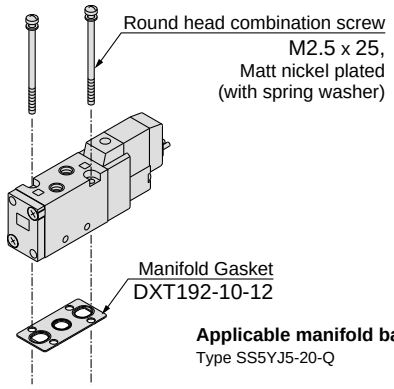
| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

**Applicable solenoid valve**
**Refer to page 35.**

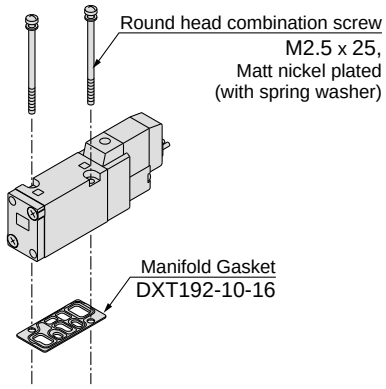
**Applicable blanking plate assembly**
SYJ5000-21-3A-2-Q

**Applicable connector assembly**
**Refer to page 35.**

## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base




**Applicable manifold base**
Type SS5YJ5-20-Q



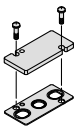

**Applicable manifold base**
Sub-plate: SYJ5000-22-1□-Q
Type SS5YJ5-40-Q
Type SS5YJ5-41-Q
Type SS5YJ5-42-Q
Type SS5YJ5-43-Q

**Thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

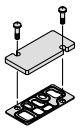
## Blanking Plate Assembly

**SYJ5000-21-1A-1-Q**



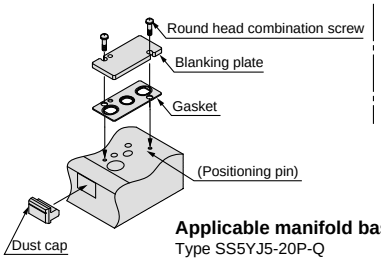
**Applicable manifold base**
Type SS5YJ5-20-Q

**SYJ5000-21-1A-2-Q**



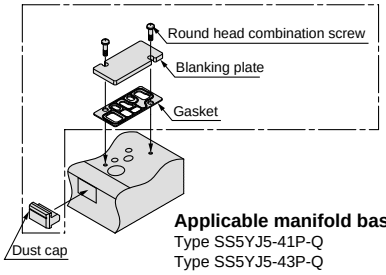
**Applicable manifold base**
Type SS5YJ5-40-Q
Type SS5YJ5-41-Q
Type SS5YJ5-42-Q
Type SS5YJ5-43-Q

**SYJ5000-21-3A-1-Q**




**Applicable manifold base**
Type SS5YJ5-20P-Q

**SYJ5000-21-3A-2-Q**




**Applicable manifold base**
Type SS5YJ5-41P-Q
Type SS5YJ5-43P-Q

### ⚠ Caution

**Mounting screw tightening torques**

**M2.5: 0.45 N·m**

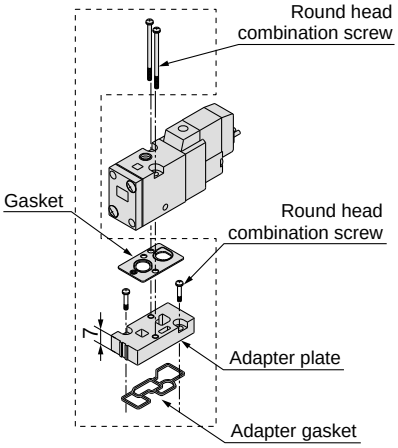
**Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.**

## Mix Installation of the SYJ500 and the SYJ5000 Valves on the Same Manifold

- Use of an adapter plate makes it possible to mount Series SYJ500 on the manifold bases of series SYJ5000.
- When mounting the SYJ500 valve on the SYJ5000 manifold, the SYJ500 solenoid must be positioned on the same side of the manifold as a single solenoid SYJ500. (Refer to the figure below.)
- For base mounted style, the A port of the 3 port valve flows out the B port of manifold base.

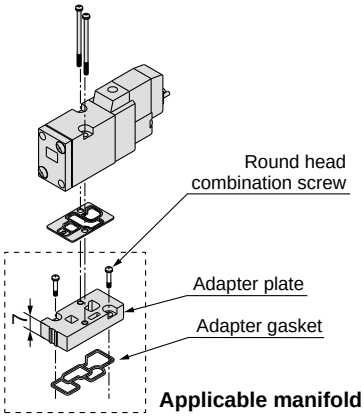
## Adapter Plate Assembly

### SYJ500-3-1A-1-Q




**Applicable manifold base**
Type SS5YJ5-20-Q

### SYJ500-3-1A-2-Q

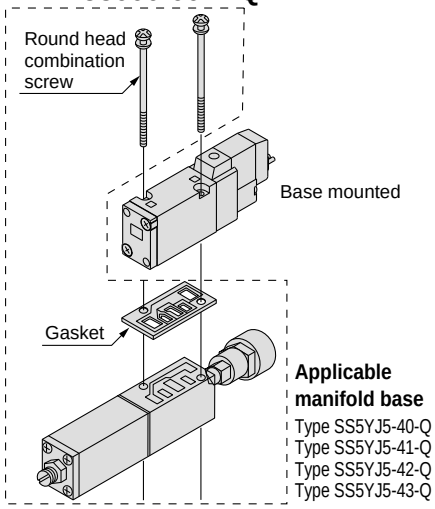



**Applicable manifold base**
Type SS5YJ5-40-Q
Type SS5YJ5-41-Q
Type SS5YJ5-42-Q
Type SS5YJ5-43-Q

## Interface Regulator (P port regulation)

Spacer type regulating valve on manifold block can regulate the pressure to the valve individually.

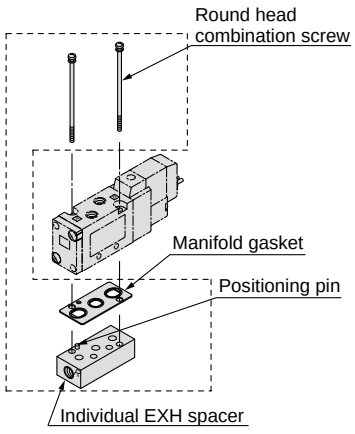
### ARBYJ5000-00-P-Q




Refer to back page 12 prior to handling.

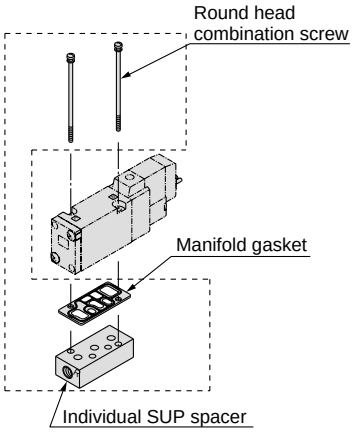
## Individual EXH Spacer Assembly

### SYJ5000-17-1A-1-Q




**Applicable manifold base**
Type SS5YJ5-20-Q

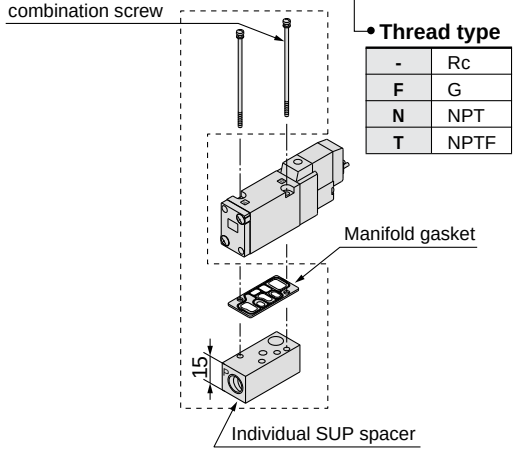
### SYJ5000-17-1A-2-Q




**Applicable manifold base**
Type SS5YJ5-40-Q
Type SS5YJ5-41-Q
Type SS5YJ5-42-Q
Type SS5YJ5-43-Q

## Individual SUP Spacer Assembly

### SYJ5000--16--2 □ A-Q




| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

**Applicable manifold base**
Type SS5YJ5-41-Q
Type SS5YJ5-42-Q
Type SS5YJ5-43-Q

## ⚠ Caution

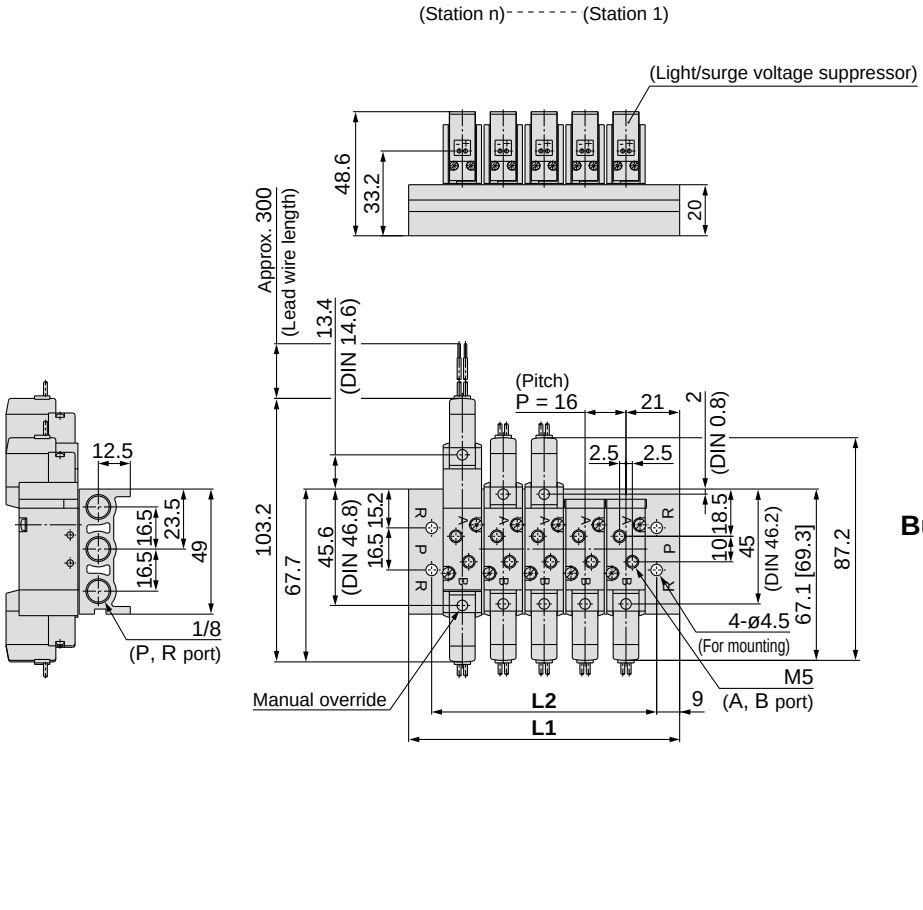
**Mounting screw tightening torques**

**M2.5: 0.45 N·m**

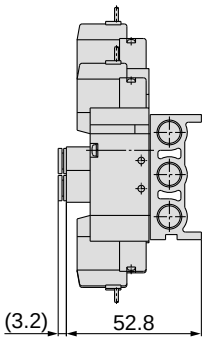
**Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.**

## Type 20: Top Ported/SS5YJ5-20-Stations-00□-Q

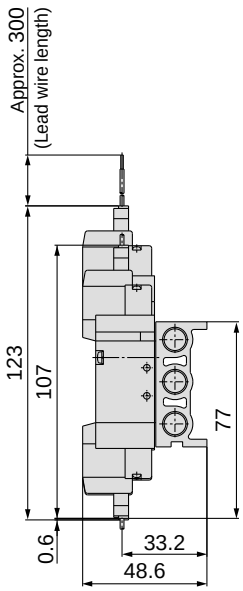
### Grommet (G)



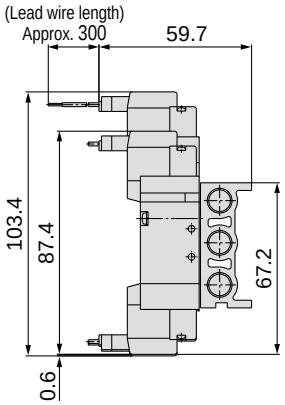

### Built-in one-touch fitting



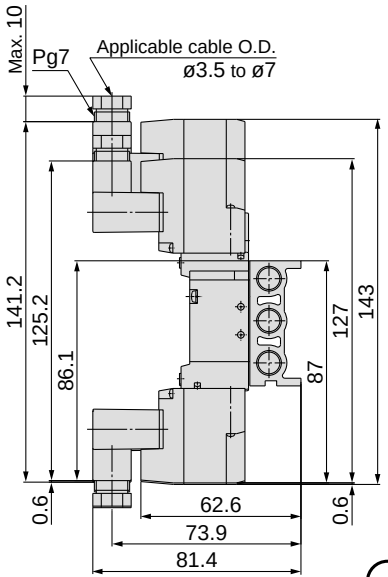

### L plug connector (L)



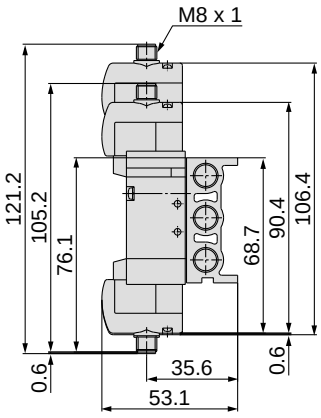

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)

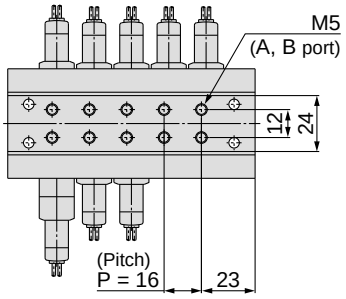


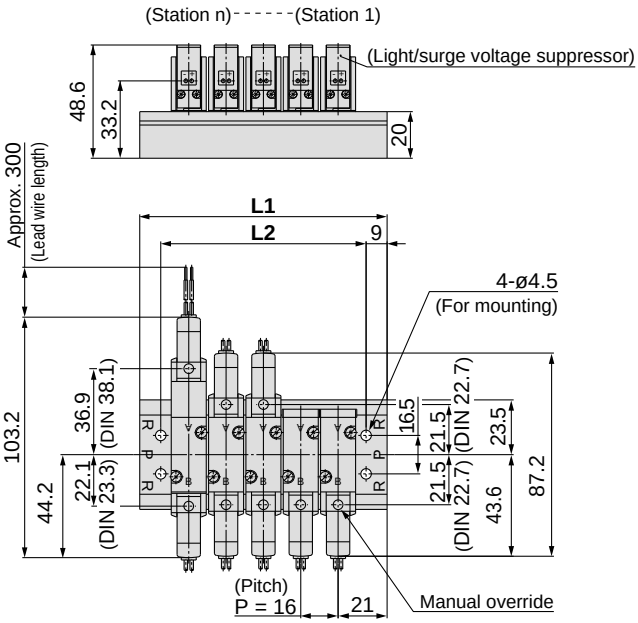

Refer to back page 11 for dimentions with connector cable.

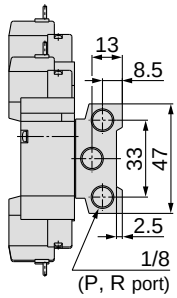
| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 | 346 |
| **L2** | 40 | 56 | 72 | 88 | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 | 264 | 280 | 296 | 312 | 328 |

## Type 40: Bottom Ported/SS5YJ5-40-Stations-M5□-Q

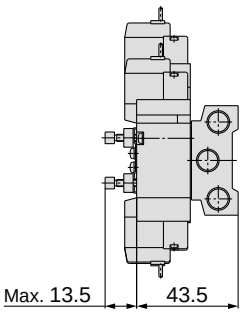
### Grommet (G)



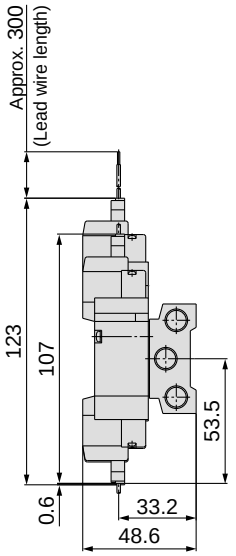



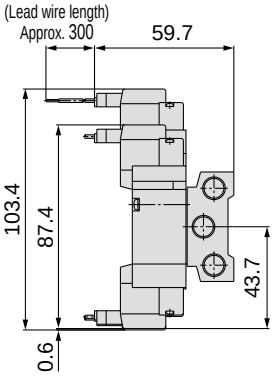

### Built-in speed controller



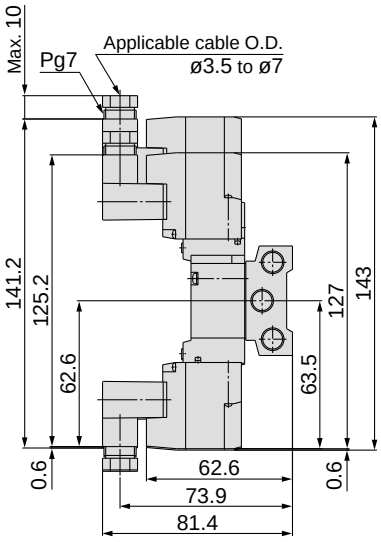

### L plug connector (L)



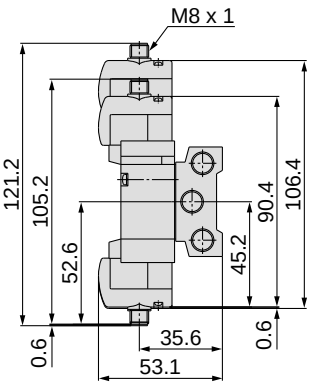

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)

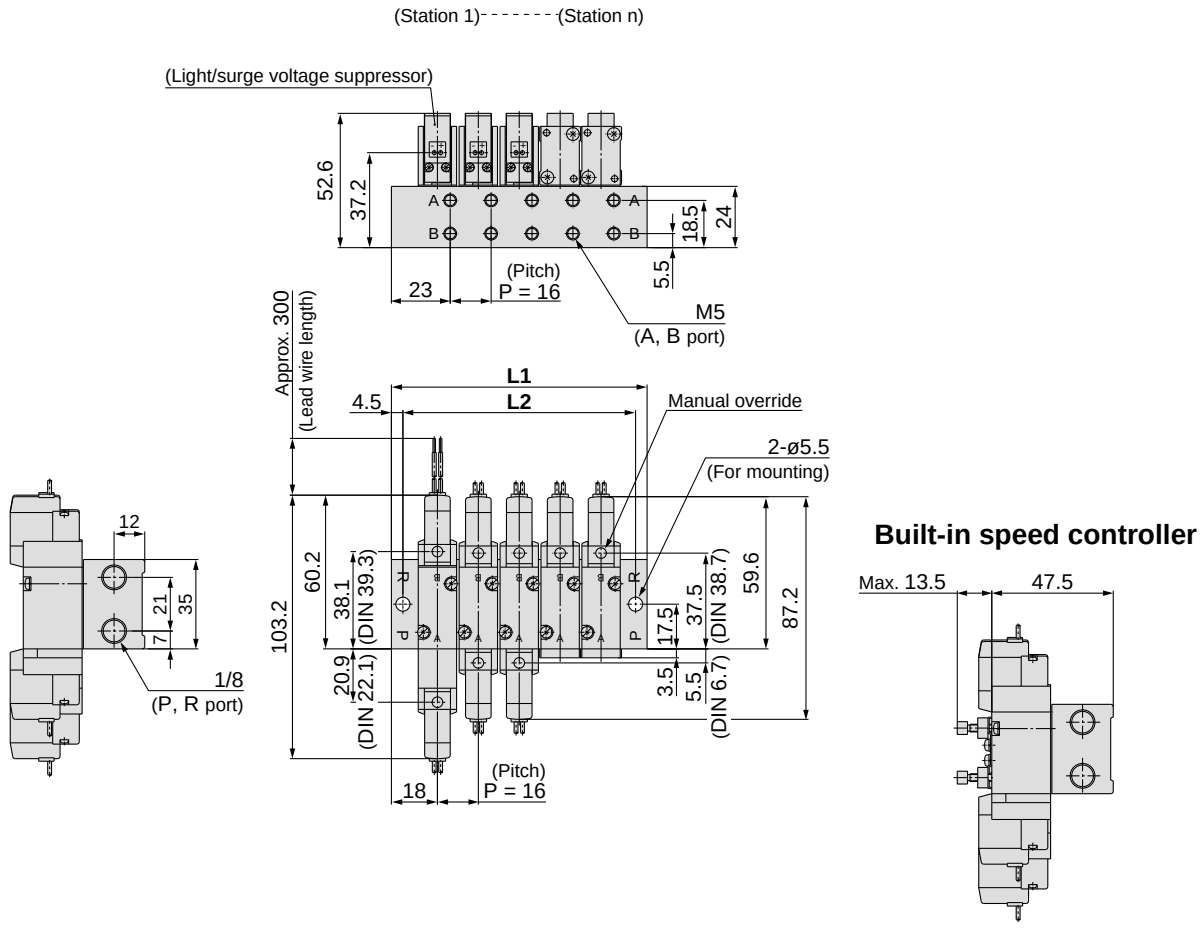



Refer to back page 11 for dimentions with connector cable.

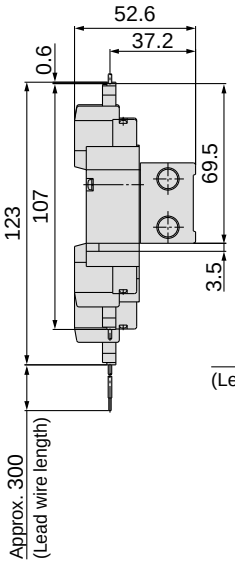
| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 | 346 |
| **L2** | 40 | 56 | 72 | 88 | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 | 264 | 280 | 296 | 312 | 328 |

## Type 41: Side Ported/SS5YJ5-41- Stations -M5□-Q

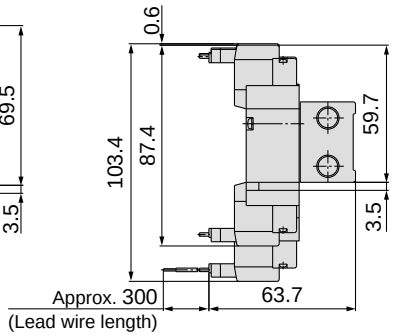
### Grommet (G)



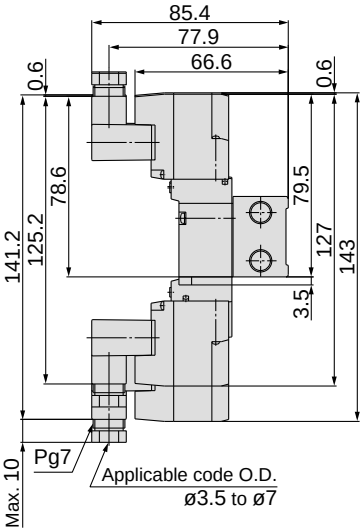

### L plug connector (L)



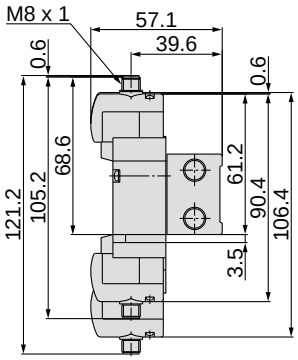

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)




Refer to back page 11 for dimentions with connector cable.

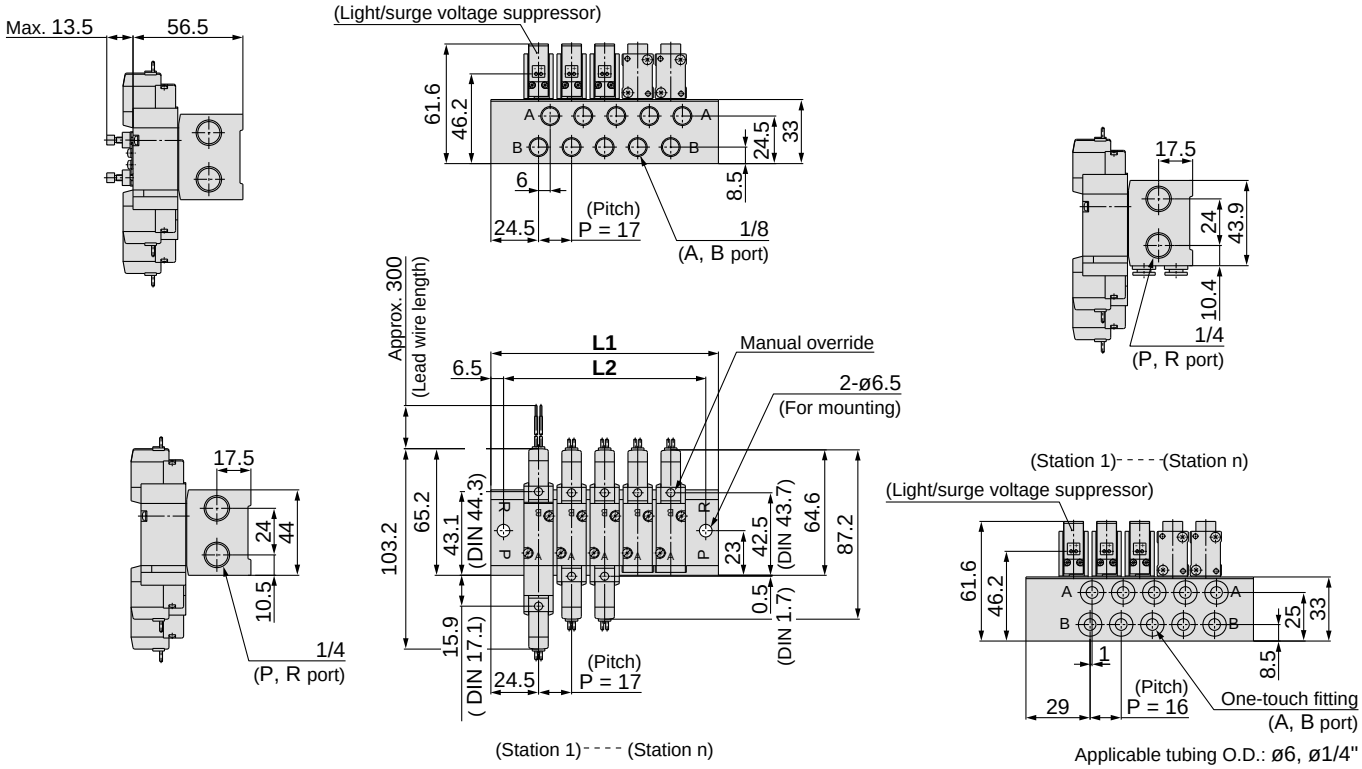
| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |
| **L2** | 43 | 59 | 75 | 91 | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 | 267 | 283 | 299 | 315 | 331 |

## Type 42: Side Ported/SS5YJ5-42-Stations-01, C6/N7□-Q

### Grommet (G)
**For 01□**

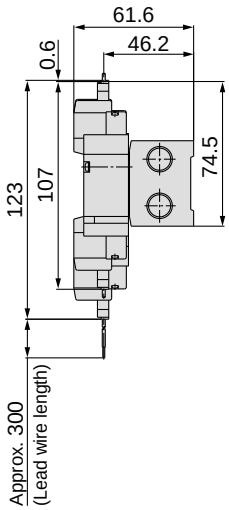
**For C6/N7□ (Built-in one-touch fitting)**

### Built-in speed controller

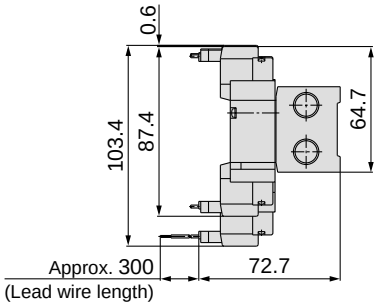



∗ Other dimensions are the same as the grommet type.

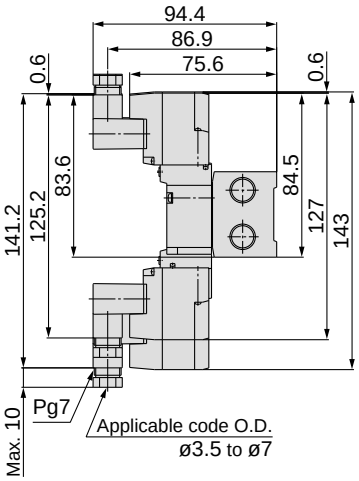
### L plug connector (L)



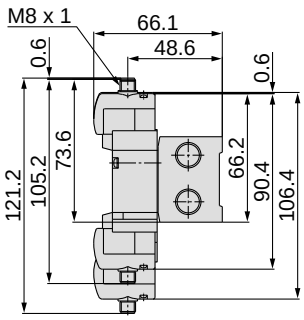

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)

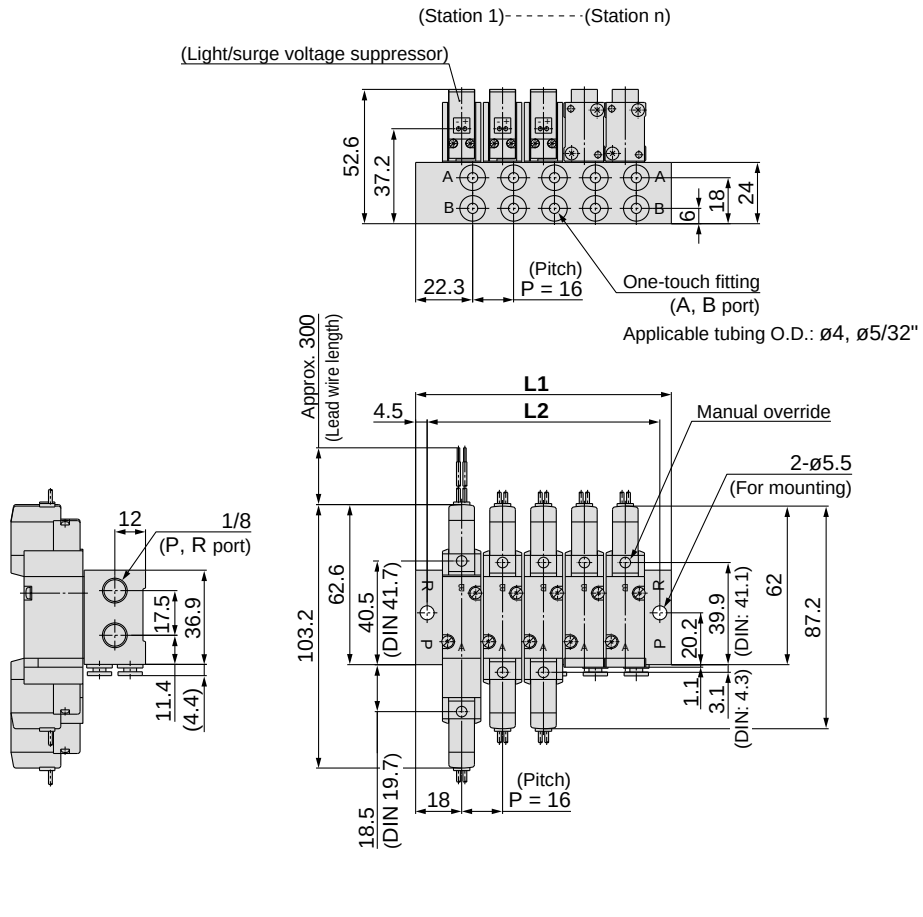



Refer to back page 11 for dimentions with connector cable.

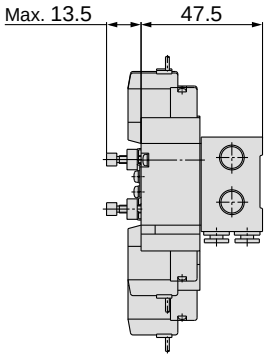
| A, B port size | Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For 1/8 | **L1** | 66 | 83 | 100 | 117 | 134 | 151 | 168 | 185 | 202 | 219 | 236 | 253 | 270 | 287 | 304 | 321 | 338 | 355 | 372 |
| | **L2** | 53 | 70 | 87 | 104 | 121 | 138 | 155 | 172 | 189 | 206 | 223 | 240 | 257 | 274 | 291 | 308 | 325 | 342 | 359 |
| For C6/N7 | **L1** | 65 | 81 | 97 | 113 | 129 | 145 | 161 | 177 | 193 | 209 | 225 | 241 | 257 | 273 | 289 | 305 | 321 | 337 | 353 |
| | **L2** | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |

## Type 43: Side Ported/SS5YJ3-43-Stations-C4/N3□-Q

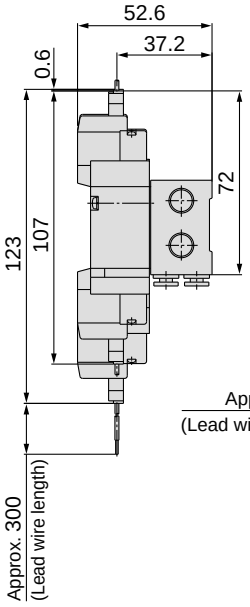
### Grommet (G)



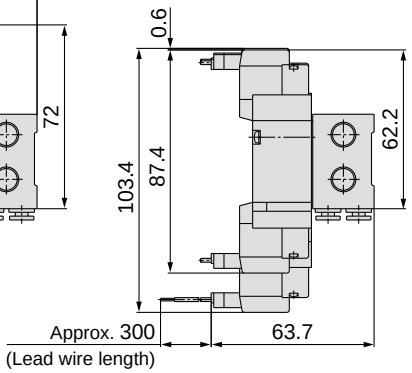

### Built-in slottle valve



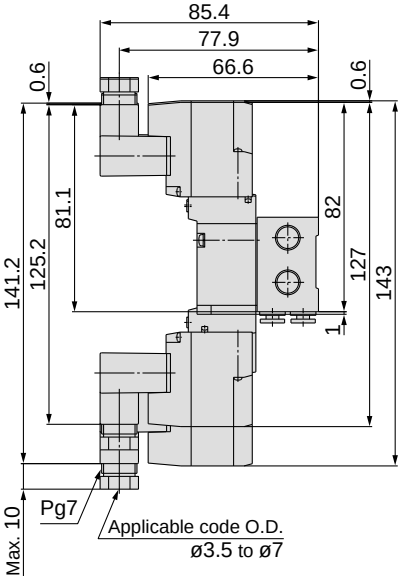

### L plug connector (L)



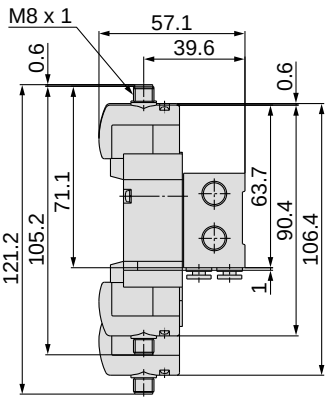

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)



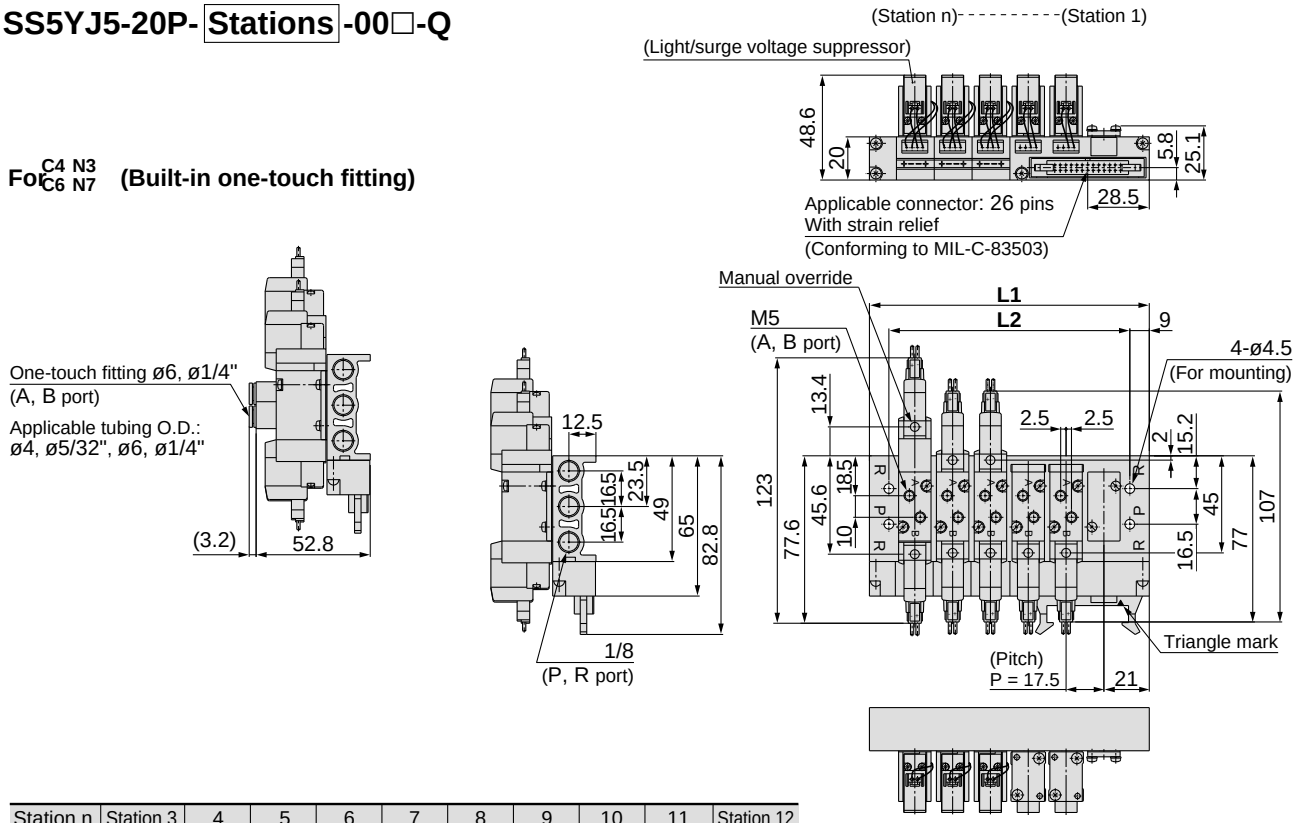

Refer to back page 11 for dimentions with connector cable.

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |
| **L2** | 43 | 59 | 75 | 91 | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 | 267 | 283 | 299 | 315 | 331 |

## Flat Ribbon Cable Manifold

### SS5YJ5-20P- Stations -00□-Q

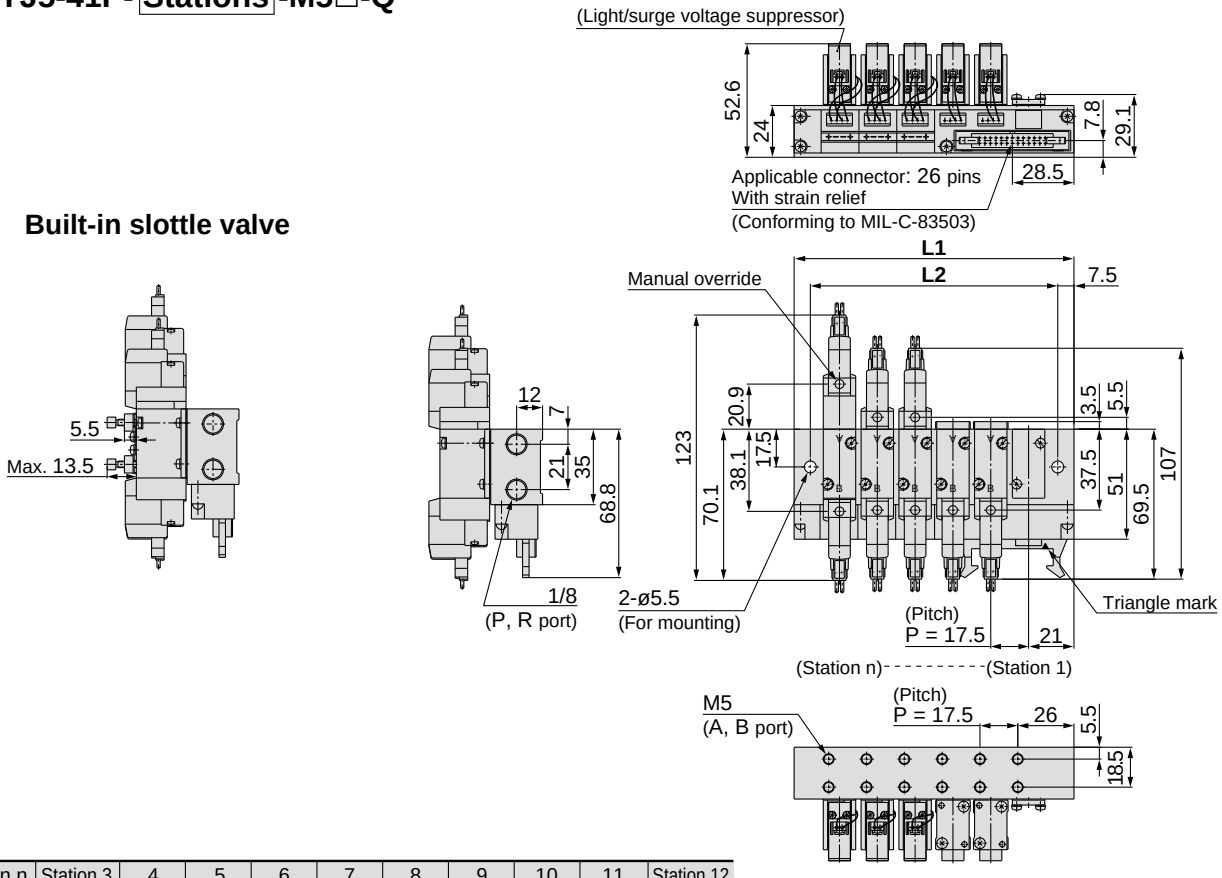
For C4 N3 C6 N7 (Built-in one-touch fitting)




| Station n | Station 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Station 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| **L2** | 59 | 76.5 | 94 | 111.5 | 129 | 146.5 | 164 | 181.5 | 199 | 216.5 |

### SS5YJ5-41P- Stations -M5□-Q

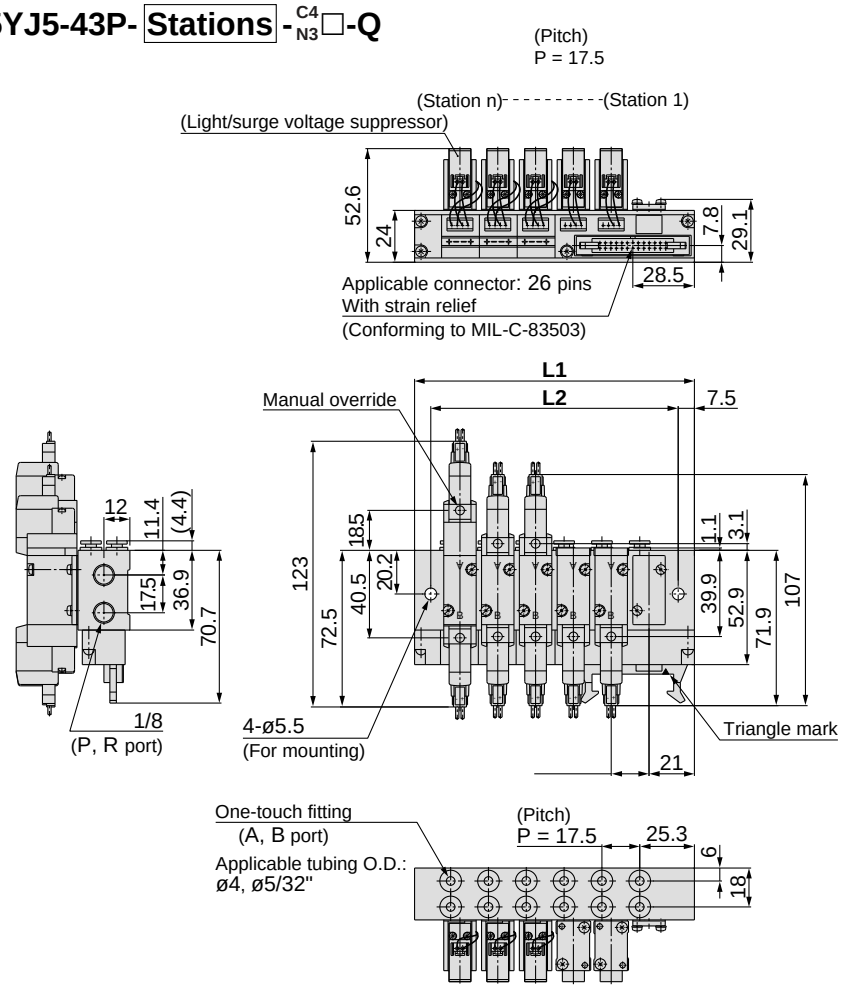
**Built-in slottle valve**



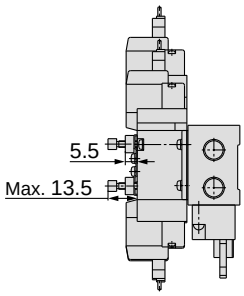

| Station n | Station 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Station 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| **L2** | 62 | 79.5 | 97 | 114.5 | 132 | 149.5 | 167 | 184.5 | 202 | 219.5 |

## Flat Ribbon Cable Manifold

### SS5YJ5-43P-Stations-$^{C4}_{N3}$□-Q

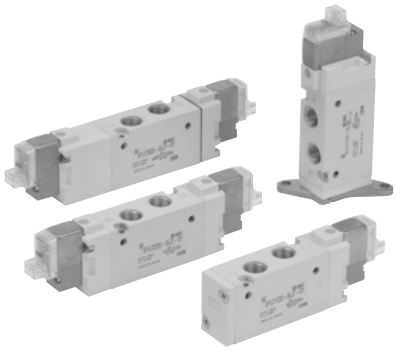



**Built-in speed controller**




| Station n | Station 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Station 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| **L2** | 62 | 79.5 | 97 | 114.5 | 132 | 149.5 | 167 | 184.5 | 202 | 219.5 |

# Rubber Seal
# 5 Port Solenoid Valve
# Series SYJ7000



Body ported

Base mounted

## Specifications

For details about certified products conforming to international standards, visit us at www.smcworld.com.

| | | |
|---|---|---|
| **Fluid** | | Air |
| **Operating pressure range (MPa)** | **2 position single** | 0.15 to 0.7 |
| | **2 position double** | 0.1 to 0.7 |
| | **3 position** | 0.15 to 0.7 |
| **Ambient and fluid temperature (°C)** | | –10 to 50 (No freezing. Refer to back page 3.) |
| **Response time (ms)** Note 1) **(at 0.5 MPa)** | **2 position single, double** | 30 or less |
| | **3 position** | 60 or less |
| **Max. operating frequency (Hz)** | **2 position single, double** | 5 |
| | **3 position** | 3 |
| **Manual override (Manual operation)** | | Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type |
| **Pilot exhaust method** | | Individual exhaust for the pilot valve, Common exhaust for the pilot and main valve |
| **Lubrication** | | Not required |
| **Mounting orientation** | | Unrestricted |
| **Shock/Vibration resistance (m/s²)** Note 2) | | 150/30 |
| **Enclosure** | | Dust proof (∗ DIN terminal, M8 connector conforms to IP65.) |

∗ Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised states every once for each condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

## Solenoid Specifications

| | | | | |
|---|---|---|---|---|
| **Electrical entry** | | | Grommet (G), (H)<br>L plug connector (L)<br>M plug connector (M)<br>DIN terminal (D)<br>M8 connector (W) | |
| | | | G, H, L, M, W | D |
| **Coil rated voltage (V)** | **DC** | | 24, 12, 6, 5, 3 | 24, 12 |
| | **AC 50/60 Hz** | | - | 100, 110, 200, 220 |
| **Allowable voltage fluctuation** | | | ±10% of rated voltage ∗ | |
| **Power consumption (W)** | **DC** | **Standard** | 0.35 {With light: 0.4 (DIN terminal with light: 0.45)} | |
| | | With power saving circuit | 0.1 (With light only) | |
| **Apparent power VA**∗ | **AC** | **100 V** | - | 0.78 (With light: 0.87) |
| | | **110 V** | - | 0.86 (With light: 0.97) |
| | | **[115 V]** | - | [0.94 (With light: 1.07)] |
| | | **200 V** | - | 1.15 (With light: 1.30) |
| | | **220 V** | - | 1.27 (With light: 1.46) |
| | | **[230 V]** | - | [1.39 (With light: 1.60)] |
| **Surge voltage suppressor** | | | Diode (DIN terminal, Varistor when non-polar types) | |
| **Indicator light** | | | LED (Neon light when AC with DIN terminal) | |

∗ In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

∗ For 115 VAC and 230 VAC, the allowable voltage is –15% to +5% of rated voltage.

∗ S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.

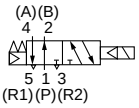
S and Z type: 24 VDC: –7% to +10%, 12 VDC: –4% to +10%

T type: 24 VDC: –8% to +10%, 12 VDC: –6% to +10%

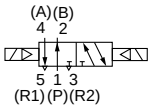
**JIS Symbol**

**Body ported**

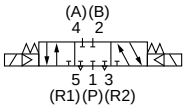
2 position single



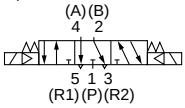

2 position double



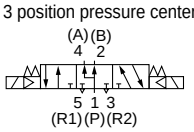

3 position closed center




3 position exhaust center

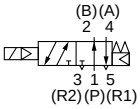



3 position pressure center

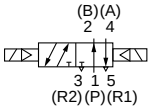



**Base mounted**

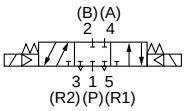
2 position single solenoid



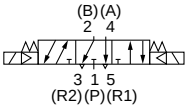

2 position double solenoid



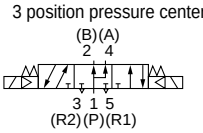

3 position closed center




3 position exhaust center




3 position pressure center




**Made to Order**
**(For details, refer to pages 78 through to 80.)**

## Flow Characteristics/Weight

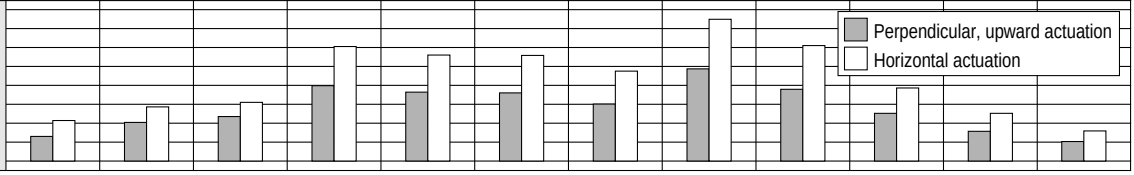
| Valve model | | Type of actuation | | Port size 1,5,3 (P,EA,EB) | Port size 4,2 (A,B) | Flow characteristics Note 1) 1→4/2 (P→A/B) C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | 4/2→5/3 (A/B→EA/EB) C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | Weight (g) Note 2, 3) Grommet | L/M plug connector | DIN terminal | M8 connector |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Body ported | SYJ7□20-□-01 | 2 position | Single | 1/8 | 1/8 | 2.2 | 0.36 | 0.58 | 582 | 2.4 | 0.34 | 0.63 | 626 | 85 | 86 | 107 | 90 |
| | | | Double | | | | | | | | | | | 98 | 100 | 142 | 108 |
| | | 3 position | Closed center | | | 1.8 | 0.37 | 0.45 | 479 | 2.0 | 0.35 | 0.49 | 525 | 108 | 110 | 152 | 118 |
| | | | Exhaust center | | | 1.2 | 0.50 | 0.34 | 353 | 3.0 [1.3] | 0.35[0.52] | 0.73 [0.39] | 788 [389] | | | | |
| | | | Pressure center | | | 3.0 [0.83] | 0.37 [0.50] | 0.78 [0.25] | 799 [244] | 1.8 | 0.37 | 0.45 | 479 | | | | |
| | SYJ7□20-□-C6 | 2 position | Single | 1/8 | C6 (One-touch fitting for ø6) | 1.6 | 0.33 | 0.4 | 415 | 2.2 | 0.32 | 0.53 | 567 | 96 | 97 | 98 | 101 |
| | | | Double | | | | | | | | | | | 109 | 111 | 153 | 119 |
| | | 3 position | Closed center | | | 1.4 | 0.27 | 0.35 | 349 | 1.9 | 0.33 | 0.49 | 493 | 119 | 121 | 163 | 129 |
| | | | Exhaust center | | | 1.1 | 0.37 | 0.27 | 293 | 2.5 [1.3] | 0.32[0.54] | 0.61 [0.38] | 644 [395] | | | | |
| | | | Pressure center | | | 1.8 [0.78] | 0.36 [0.40] | 0.45 [0.22] | 476 [212] | 1.6 | 0.30 | 0.39 | 407 | | | | |
| | SYJ7□20-□-C8 | 2 position | Single | 1/8 | C8 (One-touch fitting for ø8) | 2.0 | 0.39 | 0.52 | 540 | 2.3 | 0.34 | 0.61 | 600 | 96 | 97 | 98 | 101 |
| | | | Double | | | | | | | | | | | 109 | 111 | 153 | 119 |
| | | 3 position | Closed center | | | 1.7 | 0.35 | 0.42 | 447 | 2.0 | 0.29 | 0.49 | 505 | 119 | 121 | 163 | 129 |
| | | | Exhaust center | | | 1.2 | 0.38 | 0.33 | 322 | 2.6 [1.3] | 0.35[0.49] | 0.67 [0.38] | 683 [379] | | | | |
| | | | Pressure center | | | 1.9 [0.86] | 0.57 [0.46] | 0.59 [0.25] | 594 [245] | 1.7 | 0.39 | 0.42 | 459 | | | | |
| Base mounted | SYJ7□40-□-01 | 2 position | Single | 1/8 | 1/8 | 2.3 | 0.45 | 0.57 | 649 | 2.8 | 0.37 | 0.71 | 746 | 165 (85) | 166 (86) | 187 (107) | 170 (90) |
| | | | Double | | | | | | | | | | | 178 (98) | 180 (100) | 222 (142) | 188 (108) |
| | | 3 position | Closed center | | | 1.9 | 0.36 | 0.48 | 503 | 2.1 | 0.46 | 0.57 | 598 | 188 (108) | 190 (110) | 232 (152) | 198 (118) |
| | | | Exhaust center | | | 1.2 | 0.48 | 0.35 | 347 | 3.4 [1.3] | 0.36[0.57] | 0.86 [0.41] | 899 [406] | | | | |
| | | | Pressure center | | | 3.3 [0.85] | 0.43 [0.54] | 0.78 [0.25] | 918 [259] | 2.1 | 0.45 | 0.56 | 593 | | | | |
| | SYJ7□40-□-02 | 2 position | Single | 1/4 | 1/4 | 2.3 | 0.41 | 0.61 | 630 | 2.9 | 0.35 | 0.74 | 762 | 165 (85) | 166 (86) | 187 (107) | 170 (90) |
| | | | Double | | | | | | | | | | | 178 (98) | 180 (100) | 222 (142) | 188 (108) |
| | | 3 position | Closed center | | | 1.9 | 0.46 | 0.50 | 541 | 2.2 | 0.44 | 0.60 | 616 | 188 (108) | 190 (110) | 232 (152) | 198 (118) |
| | | | Exhaust center | | | 1.3 | 0.45 | 0.35 | 367 | 3.7 [1.4] | 0.27[0.56] | 0.87 [0.43] | 923 [434] | | | | |
| | | | Pressure center | | | 3.6 [0.83] | 0.23 [0.55] | 0.84 [0.25] | 877 [255] | 2.1 | 0.47 | 0.58 | 602 | | | | |

Note 1) [ ]: denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) ( ): Without sub-plate.
Note 3) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

## Cylinder Speed Chart

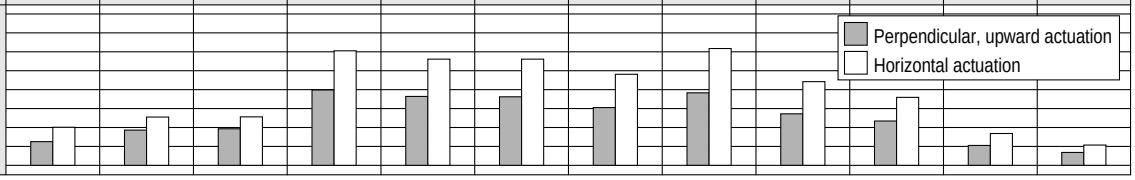
### Body Ported

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

| Series | Average speed (mm/s) | Bore size | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Series CJ2** Pressure 0.5 MPa Load rate: 50% Stroke 60 mm | | | **Series MB/CM2** Pressure 0.5 MPa Load rate: 50% Stroke 300 mm | | | | **Series MB/CA2** Pressure 0.5 MPa Load rate: 50% Stroke 500 mm | | | | |
| | | ø6 | ø10 | ø16 | ø20 | ø25 | ø32 | ø40 | ø40 | ø50 | ø63 | ø80 | ø100 |
| **SYJ7120-01** | 800 700 600 500 400 300 200 100 0 |  | | | | | | | | | | | |



### Base Mounted

| Series | Average speed (mm/s) | Bore size | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Series CJ2** Pressure 0.5 MPa Load rate: 50% Stroke 60 mm | | | **Series MB/CM2** Pressure 0.5 MPa Load rate: 50% Stroke 300 mm | | | | **Series MB/CA2** Pressure 0.5 MPa Load rate: 50% Stroke 500 mm | | | | |
| | | ø6 | ø10 | ø16 | ø20 | ø25 | ø32 | ø40 | ø40 | ø50 | ø63 | ø80 | ø100 |
| **SYJ7140-02** | 800 700 600 500 400 300 200 100 0 |  | | | | | | | | | | | |



∗ Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
∗ Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
∗ Load factor: ( (Load weight x 9.8) /Theoretical force) x 100%

### Conditions

| Body ported | | Series CJ2 | Series CM2 | Series MB/CA2 |
|---|---|---|---|---|
| SYJ7120-01 | Tubing bore x Length | ø6 x 1 m | | ø12 x 1 m |
| | Speed controller | AS2301F-06 | AS3301F-06 | AS4001F-12 |
| | Silencer | AN110-01 | AN200-02 | |

| Base mounted | | Series CJ2 | Series CM2 | Series MB/CA2 |
|---|---|---|---|---|
| SYJ7140-02 | Tubing bore x Length | ø6 x 1 m | | |
| | Speed controller | AS1301F-06 | AS3001F-06 | |
| | Silencer | AN110-01 | AN200-02 | AN3301F-06 |

## How to Order

**Type of actuation**

| | |
|---|---|
| 1 | 2 position single solenoid |
| 2 | 2 position double solenoid |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |

**Light/surge voltage suppressor**

**Electrical entry for G, H, L, M, W**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppresor |
| Z | With light/surge voltage suppressor |
| R | With surge voltage suppressor (Non-polar type) |
| U | With light/surge voltage suppressor (Non-polar type) |

* Power saving circuit is only available in the "Z" type.

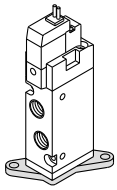
**Electrical entry for D**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppressor (Non-polar type) |
| Z | With light/surge voltage suppressor (Non-polar type) |

* DOZ is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Bracket**

-: Without bracket
**F**: With bracket



Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause the valve to leak. Brackets cannot be retrofitted.

**Thread type**

| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

**Rated voltage**

**DC**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |

* DC specifications of type D and DO is only available with 12 and 24 VDC.

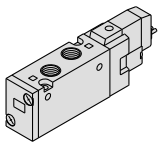
**AC** (50/60 Hz)

| | |
|---|---|
| 1 | 100 VAC |
| 2 | 200 VAC |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

AC specification is only available with D, DO type.

**A, B port size**

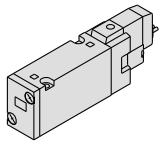
| | |
|---|---|
| 01 | 1/8 |
| C6 | One-touch fitting for ø6 |
| C8 | One-touch fitting for ø8 |
| N7 | One-touch fitting for ø1/4" |
| N9 | One-touch fitting for ø5/16" |



**(For manifold type 20, 21)**

**Body ported** SYJ7 1 2 0 — 5 M — 01 — Q

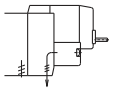
**Base mounted** SYJ7 2 4 0 — 5 M — Q



**(For sub-plate, manifold type 40, 41, 42)**

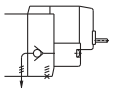
**Body option**

**0:** Pilot valve individual exhaust for the pilot valve



R port P, E port

**3:** Common exhaust type for main and pilot valve



R port P, E port

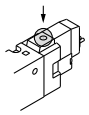
**Coil specifications**

| | |
|---|---|
| - | Standard |
| T | With power saving circuit <24 V, 12 VDC only> |

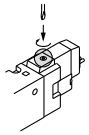
* Power saving circuit is not available in the case of D, DO or W□ type.

**Manual override**

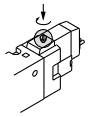
**-:** Non-locking push type



**D:** Push-turn locking slotted type



**E:** Push-turn locking lever type

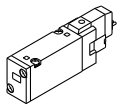


**Thread type**

| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

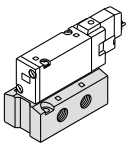
**Port size**

**-:** Without sub-plate

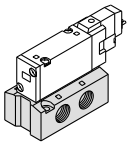


(With gasket and screws)

**01:** 1/8 With sub-plate Note)



**02:** 1/4 With sub-plate



Note) R1, R2 port: 1/4

**Electrical entry**

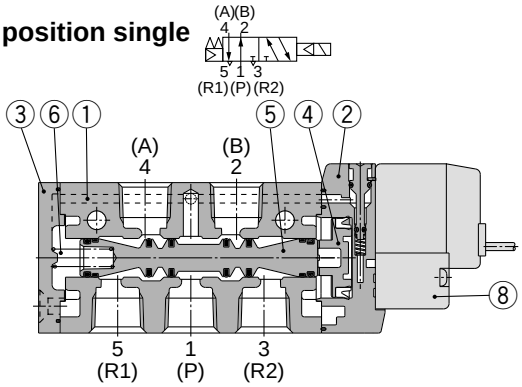
| 24, 12, 6, 5, 3 VDC | | | | 24,12 VDC 100,110, 200, 220 VAC | 24, 12, 6, 5, 3 VDC |
|---|---|---|---|---|---|
| Grommet | L plug connector | M plug connector | | DIN terminal | M8 connector * |
| **G:** Lead wire length 300 mm | **L:** With lead wire (Length 300 mm) | **M:** With lead wire (Length 300 mm) | **MN:** Without lead wire | **D:** With connector | **WO:** Without connector cable |
| **H:** Lead wire length 600 mm | **LN:** Without lead wire | **LO:** Without connector | **MO:** Without connector | **DO:** Without connector | **W□:** With connector cable Note 1) |

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

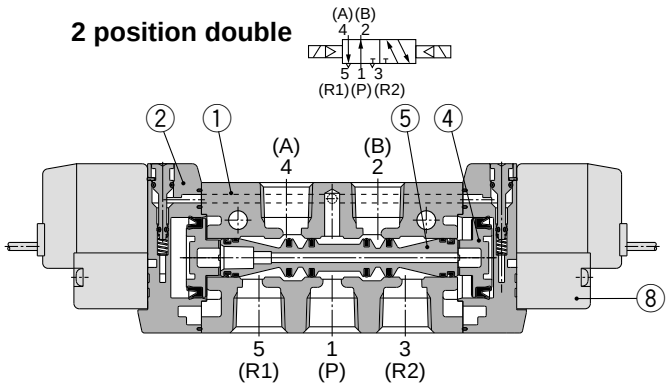
* LN, MN type: with 2 sockets.
* DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 79.
* For connector cable of M8 connector, refer to back page 10.
* Connector M8 type "WA" conforming to IEC 60947-5-2 standard, is also available. For details, see page 80.

## Construction

### 2 position single

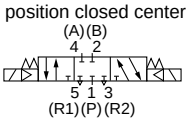



### 2 position double

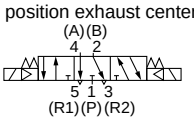



### 3 position closed center/exhaust center/pressure center

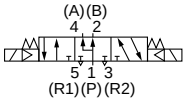
3 position closed center

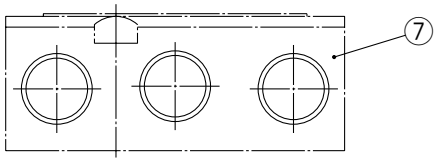


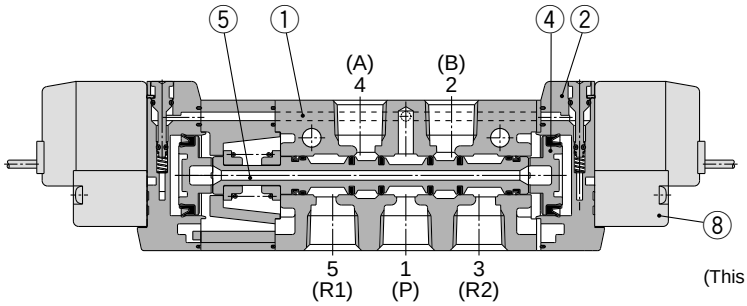

3 position exhaust center




3 position pressure center




(This figure shows a closed center type.)

### Component Parts

| No. | Description | Material | Note |
|---|---|---|---|
| 1 | Body | Aluminum die-casted | White |
| 2 | Piston plate | Resin | White |
| 3 | End cover | Aluminum die-casted | White |
| 4 | Piston | Resin | ☐ |
| 5 | Spool valve assembly | Aluminum, H-NBR | ☐ |
| 6 | Spool spring | Stainless steel | ☐ |

### Replacement Parts

| No. | Description | No. | Note | |
|---|---|---|---|---|
| 7 | Sub-plate | SYJ7000-22-1-Q | 1/8 | Aluminum die-casted |
| | | SYJ7000-22-2-Q | 1/4 | |
| 8 | Pilot valve | V111(T)-☐☐☐ | — — | |

## How to Order Pilot Valve Assembly

**V111 ☐ — 5 G ☐**

**Coil specifications**

| | |
|---|---|
| - | Standard |
| T | With power saving circuit (24, 12 VDC only) |

∗ Power saving circuit is not available in the case of W☐ type.

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppresor |
| Z | With light/surge voltage suppressor |
| R | With surge voltage suppressor (Non-polar type) |
| U | With light/surge voltage suppressor (Non-polar type) |

∗ Power saving circuit is only available in the "Z" type.

**Electrical entry**

| | | |
|---|---|---|
| G | Grommet, 300 mm lead wire | |
| H | Grommet, 600 mm lead wire | |
| L | L plug connector | With lead wire |
| LN | | Without lead wire |
| LO | | Without connector |
| M | M plug connector | With lead wire |
| MN | | Without lead wire |
| MO | | Without connector |
| WO | M8 connector | Without connector cable |
| W☐ | | With connector cable Note 1) |

∗ For connector cable of M8 connector, refer to back page 10.

Note 1) Enter the cable length symbols in ☐. Please be sure to fill in the blank referring to back page 10.

**V115 — 5 D ☐**

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| 1 | 100 VAC 50/60 Hz |
| 2 | 200 VAC 50/60 Hz |
| 3 | 110 VAC 50/60 Hz [115 V AC 50/60 Hz] |
| 4 | 220 VAC 50/60 Hz [230 VAC 50/60 Hz] |

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppressor (Non-polar type) |
| Z | With light/surge voltage suppressor (Non-polar type) |

∗ DOZ is not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Electrical entry**

| | | |
|---|---|---|
| D | DIN terminal | With connector |
| DO | | Without connector |

Note) Do not replace V111 (G, H, L, M, W) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

## How to Order Connector Assembly for L/M Plug Connector

**For DC** : **SY100-30-4A-** □

**Without lead wire: SY100-30-A**
**(with connector and 2 of sockets only)**

**Lead wire length**

| | |
|---|---|
| **-** | 300 mm |
| **6** | 600 mm |
| **10** | 1000 mm |
| **15** | 1500 mm |
| **20** | 2000 mm |
| **25** | 2500 mm |
| **30** | 3000 mm |
| **50** | 5000 mm |

## How to Order M8 Connector Cable

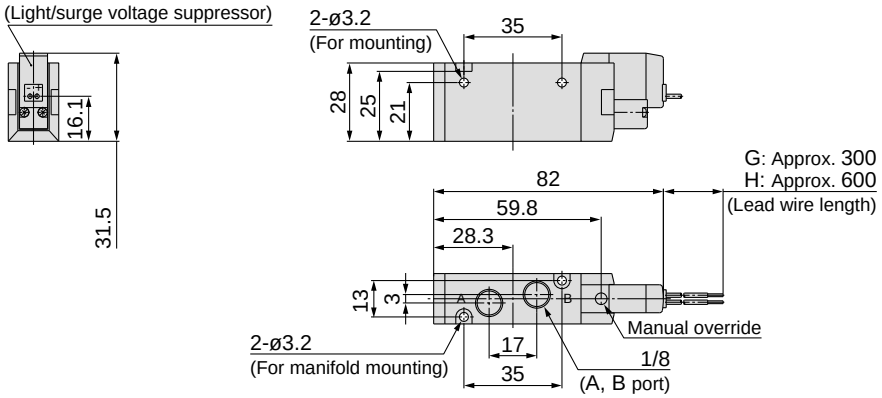
**V100-49-1-** □

**Cable length**

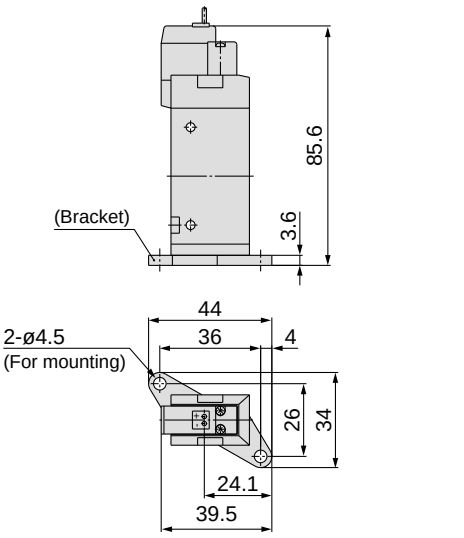
| | |
|---|---|
| **1** | 300 mm |
| **2** | 500 mm |
| **3** | 1000 mm |
| **4** | 2000 mm |
| **7** | 5000 mm |

## 2 Position Single

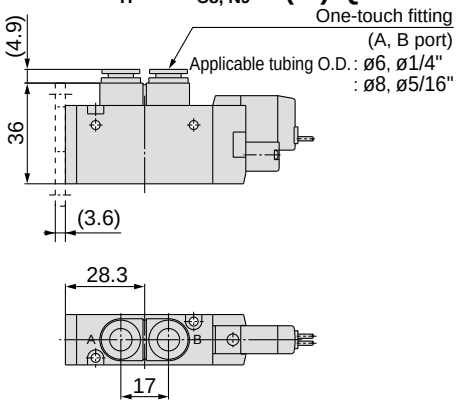
### Grommet (G), (H): SYJ7120-□$^{G}_{H}$□□-01□-Q



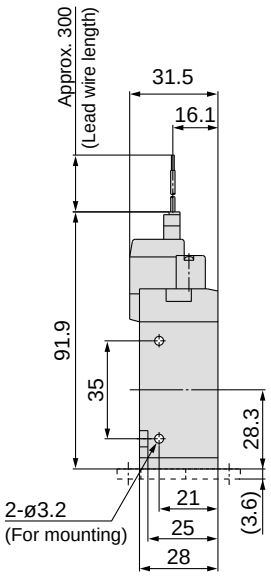

### With bracket: SYJ7120-□$^{G}_{H}$□□-01□-F-Q



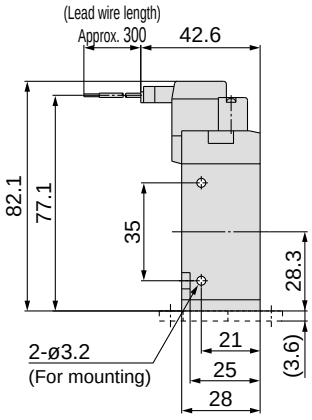

### Built-in one-touch fitting: SYJ7120-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□ (-F)-Q



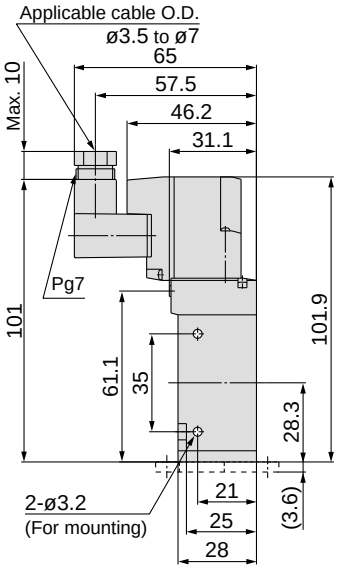

### L plug connector (L): SYJ7120-□L□□-01□ (-F)-Q



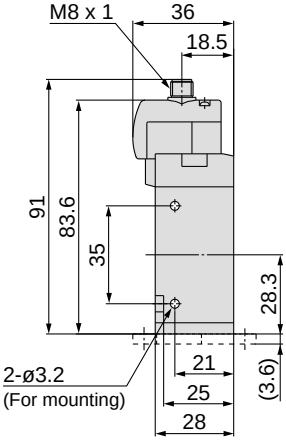

### M plug connector (M): SYJ7120-□M□□-01□ (-F)-Q




### DIN terminal (D): SYJ7120-□D□□-01□ (-F)-Q



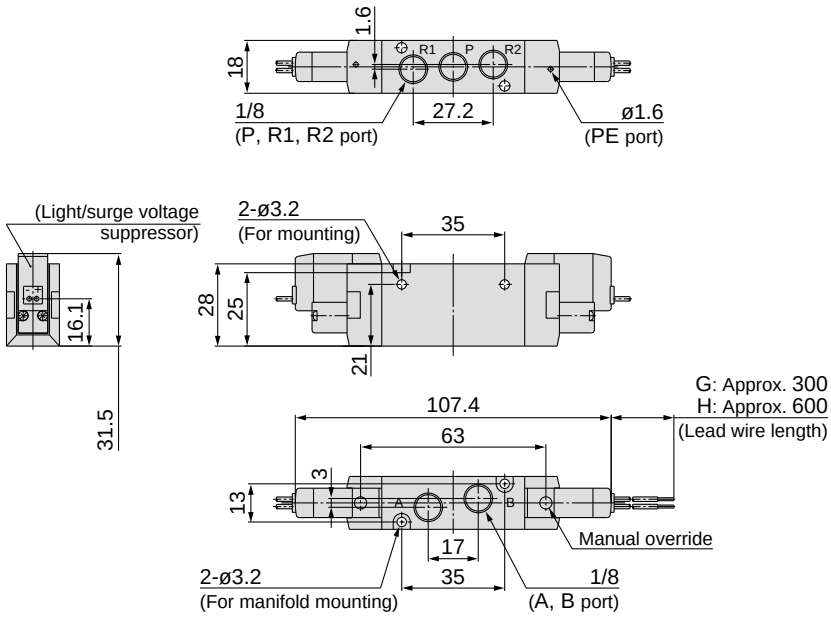

### M8 connector (WO): SYJ7120-□WO□□-01□ (-F)-Q



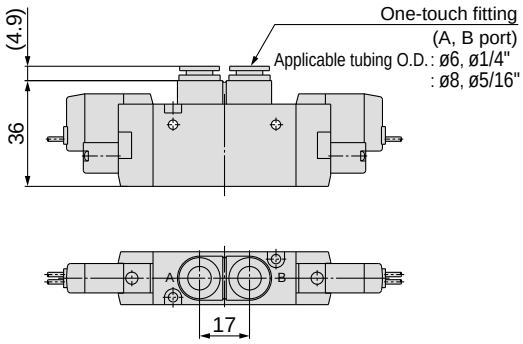

Refer to back page 11 for dimentions with connector cable.

## 2 Position Double

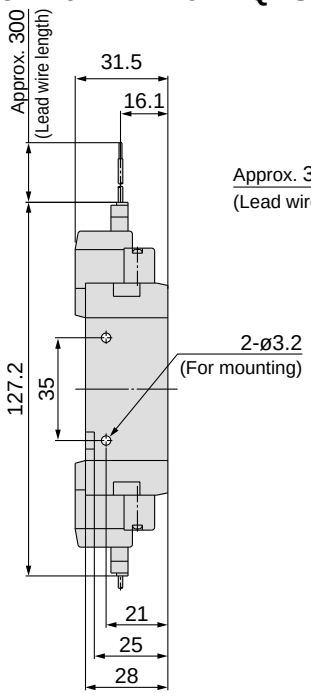
### Grommet (G), (H): SYJ7220-□$^{G}_{H}$□□-01□-Q



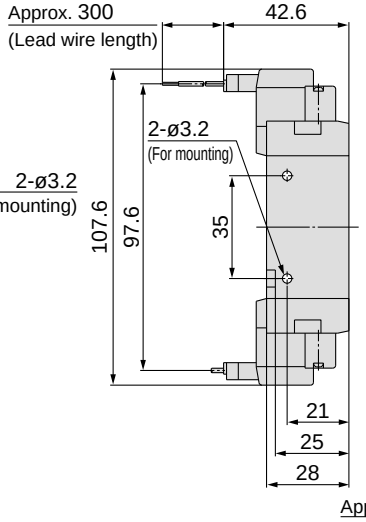

### Built-in one-touch fitting: SYJ7220-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□-Q



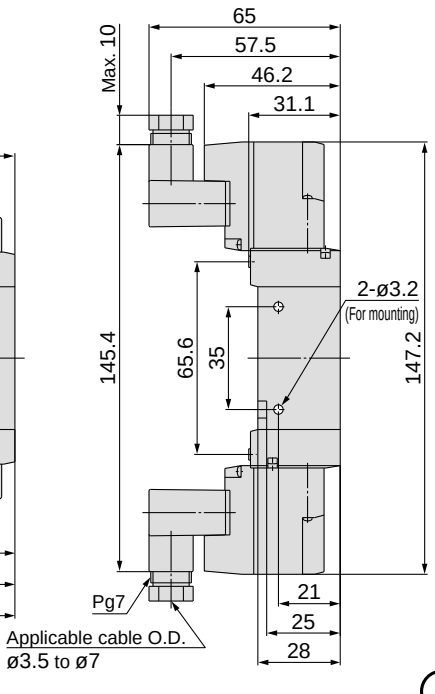

### L plug connector (L): SYJ7220-□L□□-01□-Q



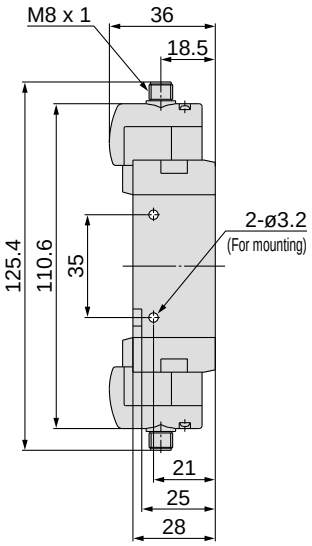

### M plug connector (M): SYJ7220-□M□□-01□-Q




### DIN terminal (D): SYJ7220-□D□□-01□-Q



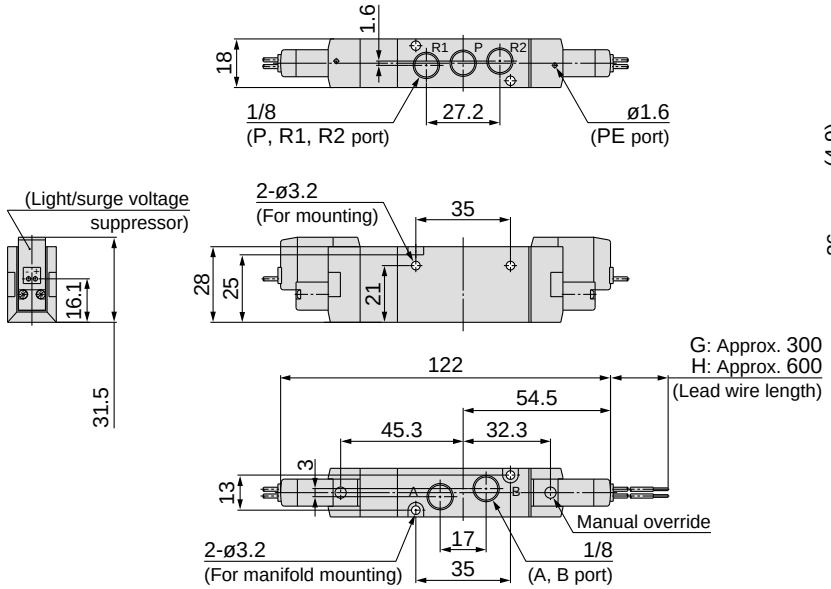

### M8 connector (WO): SYJ7220-□WO□□-01□-Q



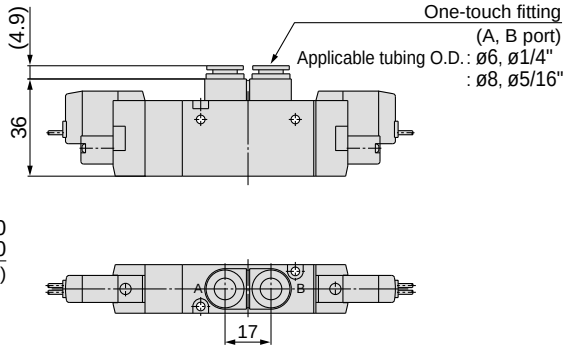

Refer to back page 11 for dimentions with connector cable.

## 3 Position Closed Center/Exhaust Center/Pressure Center

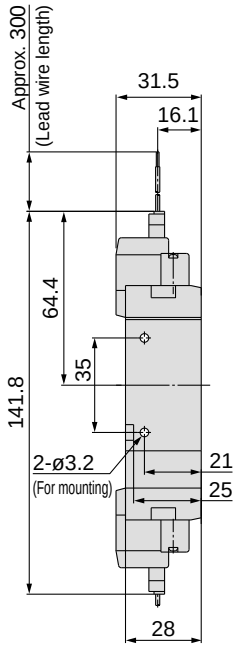
### Grommet (G), (H): SYJ7$^{3}_{4}_{5}$20-□$^{G}_{H}$□□-01□-Q



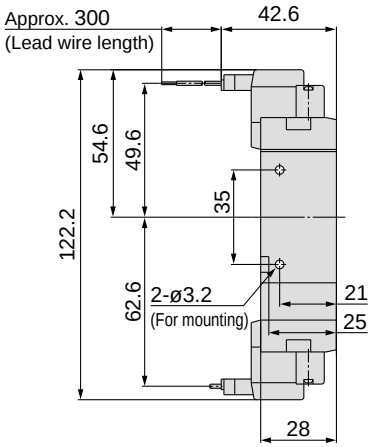

### Built-in one-touch fitting: SYJ7$^{3}_{4}_{5}$20-□$^{G}_{H}$□□-$^{C6, N7}_{C8, N9}$□-Q



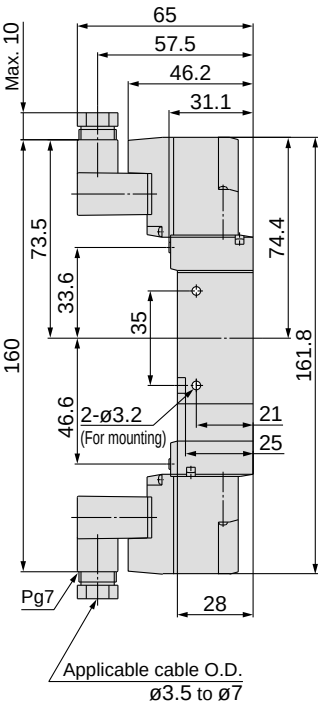

### L plug connector (L): SYJ7$^{3}_{4}_{5}$20-□L□□-01□-Q



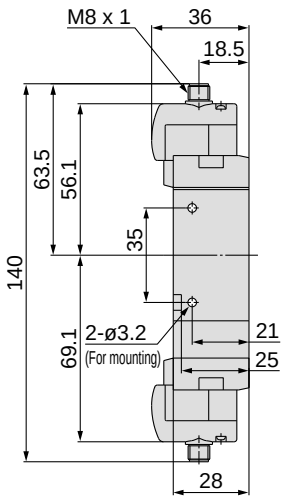

### M plug connector (M): SYJ7$^{3}_{4}_{5}$20-□M□□-01□-Q




### DIN terminal (D): SYJ7$^{3}_{4}_{5}$20-□D□□-01□-Q



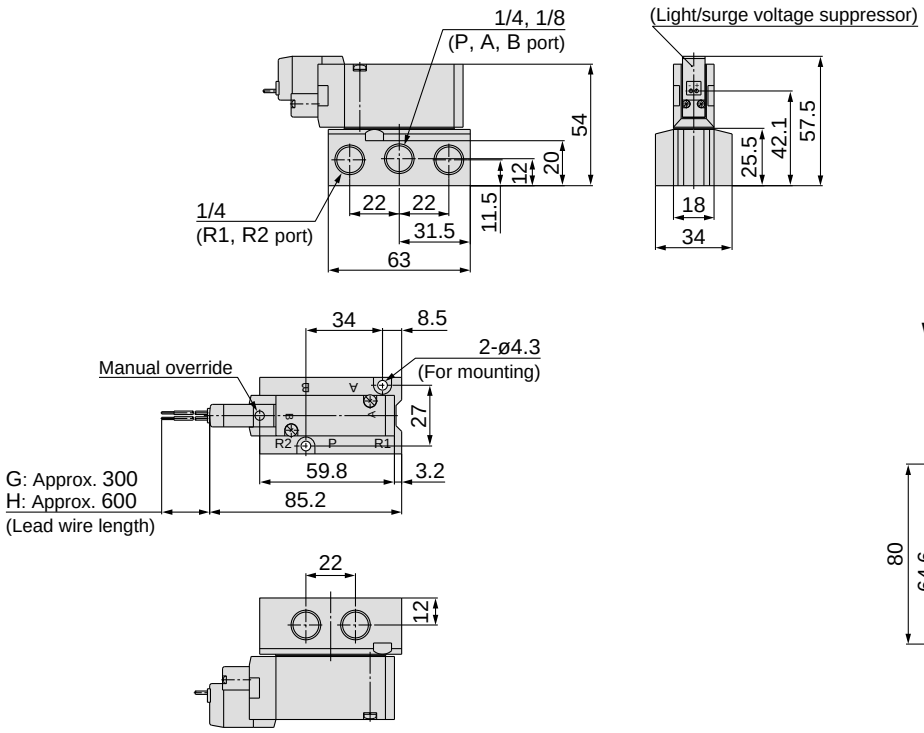

### M8 connector (WO): SYJ7$^{3}_{4}_{5}$20-□WO□□-01□-Q



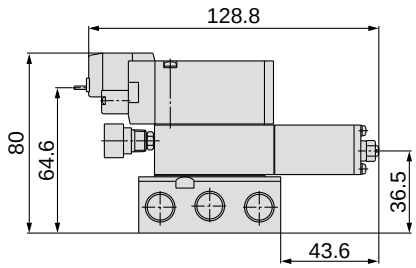

Refer to back page 11 for dimentions with connector cable.

## 2 Position Single

### Grommet (G), (H): SYJ7140-□$^{G}_{H}$□□-$^{01}_{02}$□-Q




**With interface regulator**

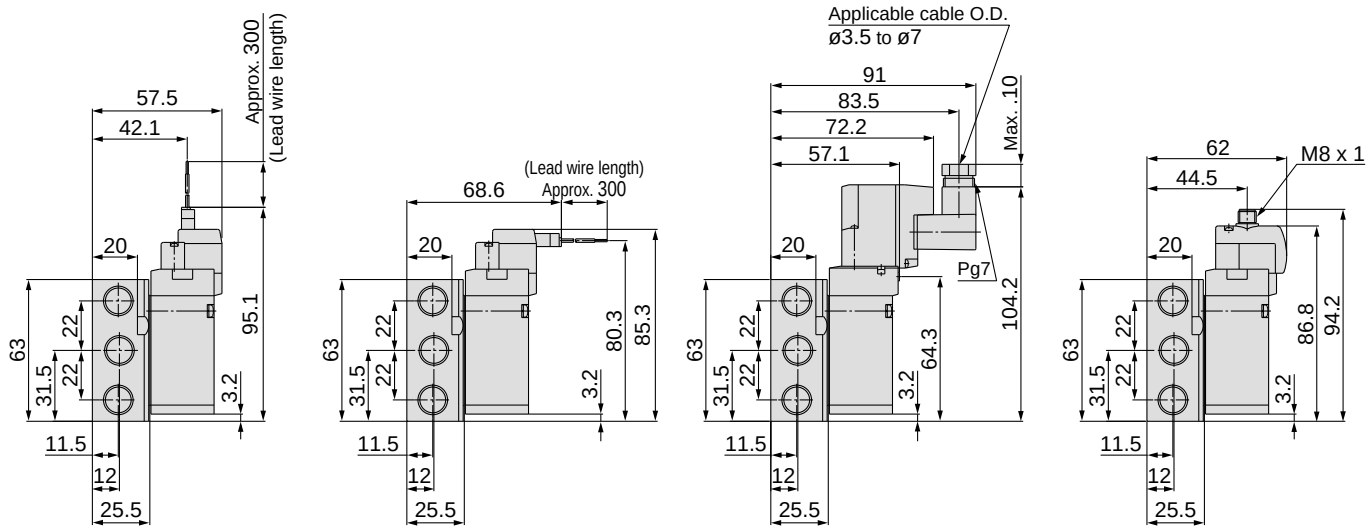



### L plug connector (L): SYJ7140-□L□□-$^{01}_{02}$□-Q

### M plug connector (M): SYJ7140-□M□□-$^{01}_{02}$□-Q

### DIN terminal (D): SYJ7140-□D□□-$^{01}_{02}$□-Q

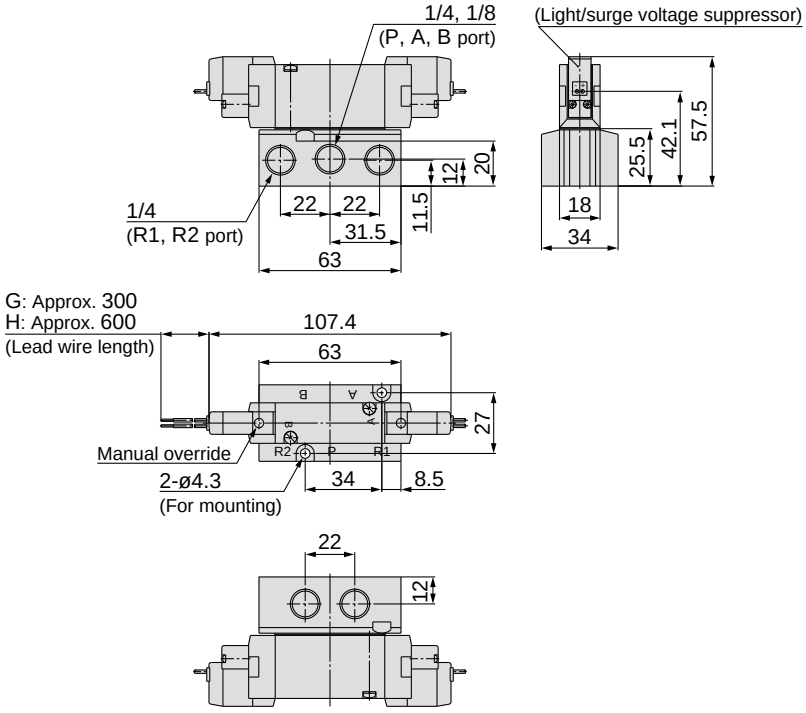
### M8 connector (WO): SYJ7140-□WO□□-$^{01}_{02}$□-Q



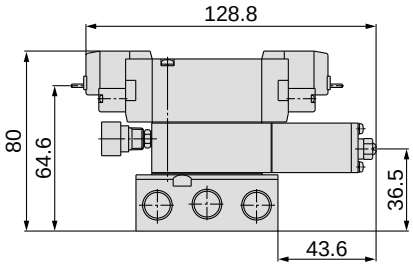

Refer to back page 11 for dimentions with connector cable.

## 2 Position Double

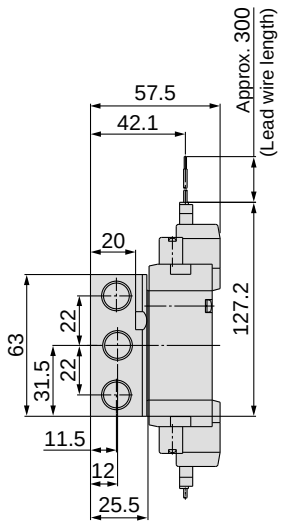
### Grommet (G), (H): SYJ7240-□$^{G}_{H}$□□-$^{01}_{02}$□-Q



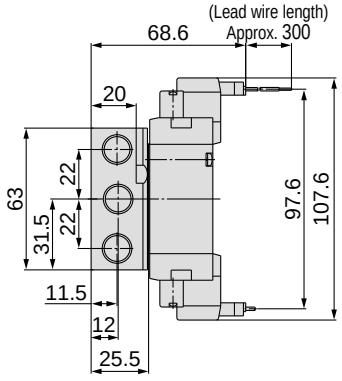

**With interface regulator**



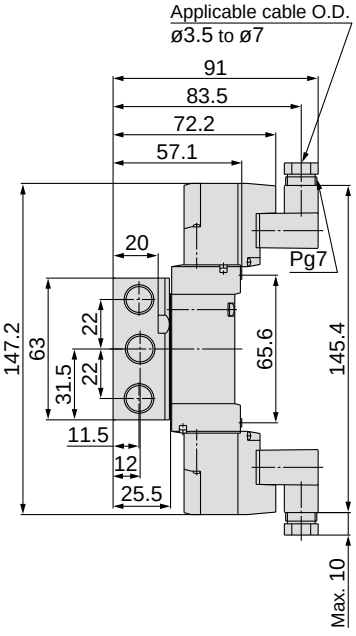

### L plug connector (L): SYJ7240-□L□□-$^{01}_{02}$□-Q



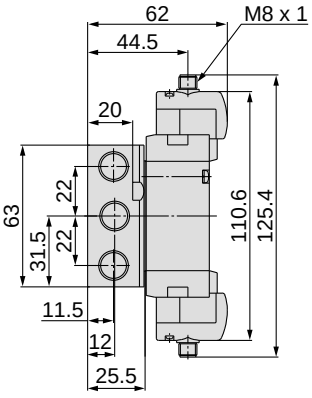

### M plug connector (M): SYJ7240-□M□□-$^{01}_{02}$□-Q




### DIN terminal (D): SYJ7240-□D□□-$^{01}_{02}$□-Q



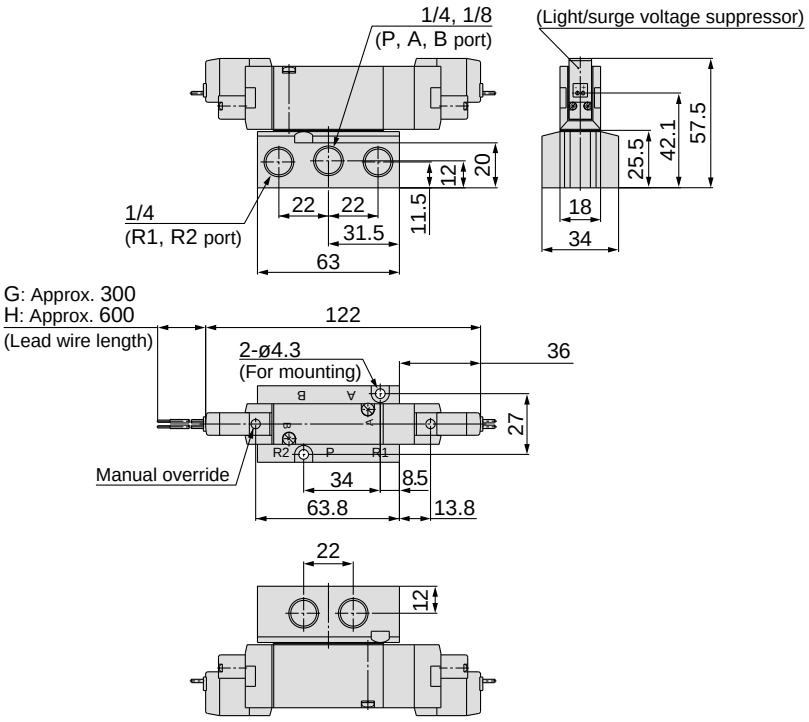

### M8 connector (WO): SYJ7240-□WO□□-$^{01}_{02}$□-Q



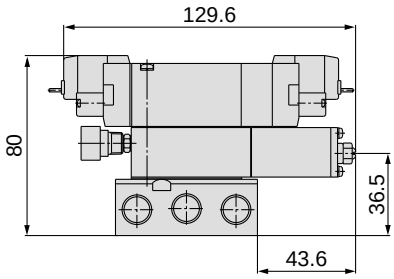

Refer to back page 11 for dimentions with connector cable.

## 3 Position Closed Center/Exhaust Center/Pressure Center

### Grommet (G), (H): SYJ7$^{3}_{4}_{5}$40-□$^{G}_{H}$□□-$^{01}_{02}$□-Q




**With interface regulator**

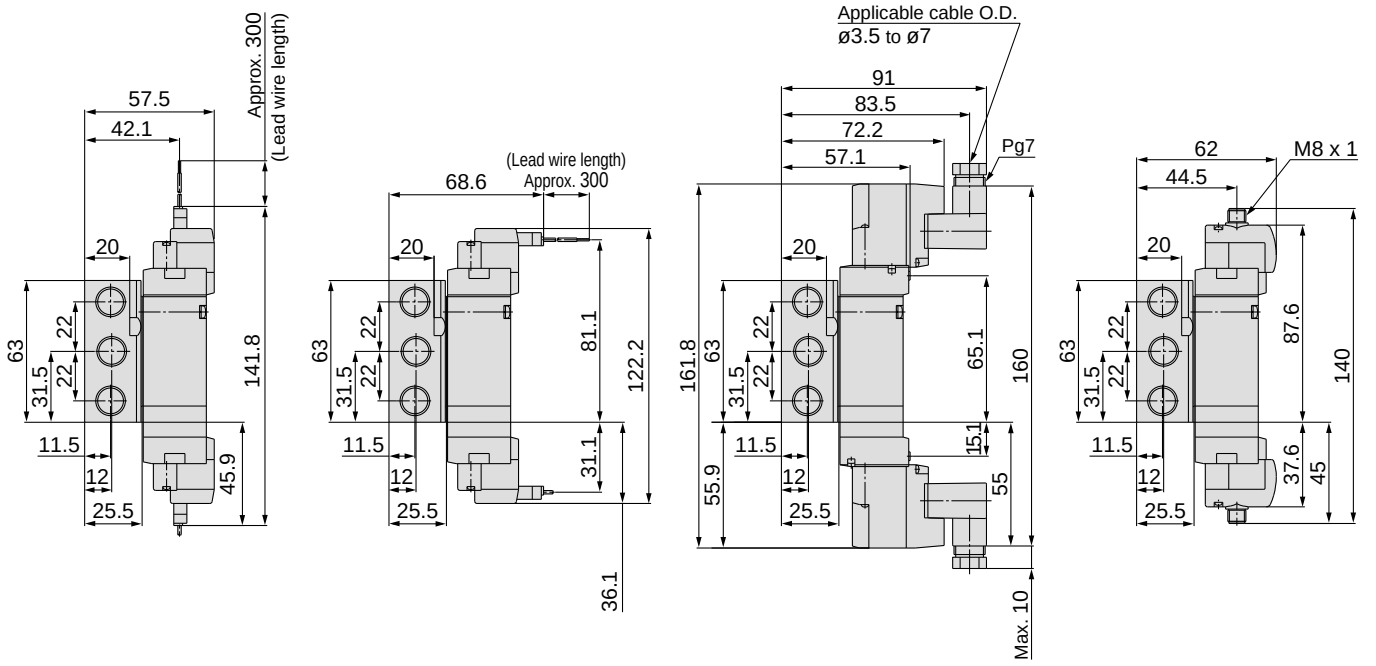



### L plug connector (L): SYJ7$^{3}_{4}_{5}$40-□L□□-$^{01}_{02}$□-Q

### M plug connector (M): SYJ7$^{3}_{4}_{5}$40-□M□□-$^{01}_{02}$□-Q

### DIN terminal (D): SYJ7$^{3}_{4}_{5}$40-□D□□-$^{01}_{02}$□-Q

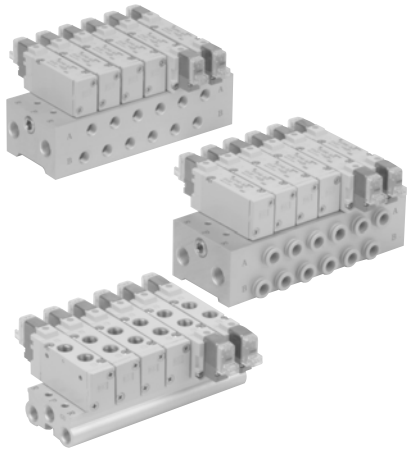
### M8 connector (WO): SYJ7$^{3}_{4}_{5}$40-□WO□□-$^{01}_{02}$□-Q




Refer to back page 11 for dimentions with connector cable.

# Series SYJ7000
# Manifold Specifications

## Manifold Standard



### Manifold Specifications

| Model | | Type 20 | Type 21 | Type 40 | Type 20 | Type 42 |
|---|---|---|---|---|---|---|
| Manifold type | | Single base/B mount | | | | |
| P (SUP), R (EXH) | | Common SUP, Common EXH | | | | |
| Valve stations | | 2 to 15 stations | 2 to 20 stations | | | |
| A, B port Porting specifications | Location | Valve | | Base | Base | |
| | Direction | Top | | Bottom | Side | |
| Port size | P, R port | 1/8 | 1/4 | | | |
| | A, B port | 1/8<br>C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) | | 1/8 | | C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) |

### Flow Characteristics

| Manifold | | | Port size | | Flow characteristics 1→4/2 (P→A/B) | | | | Flow characteristics 4/2→5/3 (A/B→R) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1(P), 5/3(R) Port | 2(B), 4(A) Port | C [dm³/(s·bar)] | b | Cv | Q[ø/min(ANR)]* | C [dm³/(s·bar)] | b | Cv | Q[ø/min(ANR)]* |
| Body ported for internal pilot | Type SS5YJ7-20 | SYJ7□2□ | 1/8 | 1/8 | 2.2 | 0.35 | 0.57 | 578 | 2.3 | 0.26 | 0.55 | 571 |
| | | | 1/8 | C6 | 1.4 | 0.32 | 0.37 | 361 | 2.0 | 0.25 | 0.49 | 493 |
| | | | 1/8 | C8 | 1.7 | 0.38 | 0.45 | 456 | 2.1 | 0.25 | 0.51 | 518 |
| | Type SS5YJ7-21 | | 1/4 | 1/8 | 2.1 | 0.36 | 0.55 | 555 | 2.3 | 0.26 | 0.54 | 571 |
| | | | 1/4 | C6 | 1.4 | 0.32 | 0.36 | 361 | 2.1 | 0.24 | 0.50 | 515 |
| | | | 1/4 | C8 | 1.8 | 0.37 | 0.50 | 479 | 2.1 | 0.20 | 0.50 | 503 |
| Base mounted for internal pilot | Type SS5YJ7-40 | SYJ7□4□ | 1/4 | 1/8 | 2.1 | 0.28 | 0.51 | 527 | 2.5 | 0.23 | 0.59 | 609 |
| | Type SS5YJ7-41 | | 1/4 | 1/8 | 2.0 | 0.30 | 0.50 | 509 | 2.2 | 0.30 | 0.55 | 559 |
| | Type SS5YJ7-42-C6 | | 1/4 | C6 | 1.5 | 0.32 | 0.38 | 386 | 2.2 | 0.23 | 0.52 | 536 |
| | Type SS5YJ7-42-C8 | | 1/4 | C8 | 1.9 | 0.24 | 0.46 | 466 | 2.2 | 0.26 | 0.53 | 546 |

Note) Value at manifold base mounted, 2 position single operating
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

### How to Order Manifold (Example)

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example:
- ● **SS5YJ7-20-03-Q** ····· 1 pc. (Manifold base)
- ∗ **SYJ7120-5G-01-Q** ····· 2 pcs. (Valve)
- ∗ **SYJ7000-21-1A-Q** ····· 1 pc. (Blanking plate assembly)

- ● **SS5YJ7-41-03-01-Q** ····· 1 pc. (Manifold base)
- ∗ **SYJ7140-5LZ-Q** ····· 1 pc. (Valve)
- ∗ **SYJ7240-5LZ-Q** ····· 1 pc. (Valve)
- ∗ **SYJ7000-21-1A-Q** ····· 1 pc. (Blanking plate assembly)

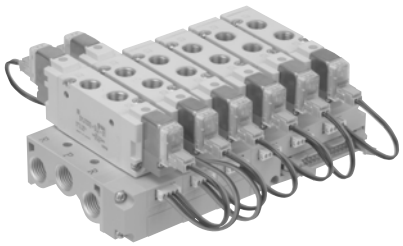
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

## Flat Ribbon Cable Manifold

- **Multiple valve wiring is simplified through the use of the flat cable connector.**
- **Clean appearance**

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.



## Flat Ribbon Cable Manifold Specifications

| Model | | Type 21P |
|---|---|---|
| Manifold type | | Single base/B mount |
| P (SUP), R (EXH) | | Common SUP, Common EXH |
| Valve stations | | 3 to 12 stations |
| A, B port location | | Valve |
| Port size | P, R port | 1/4 |
| | A, B port | 1/8, C6, C8 |
| Applicable flat ribbon cable connector | | Socket: 26 pins MIL type with strain relief (MIL-C-83503) |
| Internal wiring | | In common between +COM and –COM (Z type: +COM only). |
| Rated voltage | | 24, 12 VDC |

Note 1) The value is for manifold base and individually operated 2 position type.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

## Flow Characteristics

| Manifold | | | Port size | | Flow characteristics 1→4/2 (P→A/B) | | | | Flow characteristics 4/2→5/3 (A/B→R) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1(P), 5/3(R) Port | 2(B), 4(A) Port | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* |
| Body ported for internal pilot | Type SS5YJ7-21P-01 | SYJ7□23 | 1/4 | 1/8 | 2.1 | 0.36 | 0.55 | 555 | 2.3 | 0.26 | 0.54 | 571 |
| | Type SS5YJ7-21P-C6 | | 1/4 | C6 | 1.4 | 0.32 | 0.36 | 361 | 2.1 | 0.24 | 0.50 | 515 |
| | Type SS5YJ7-21P-C8 | | 1/4 | C8 | 1.8 | 0.37 | 0.50 | 479 | 2.1 | 0.20 | 0.50 | 503 |

Note) Value at manifold base mounted, 2 position single operating
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

### How to Order Manifold (Example)

Instruct by specifying the valves, blanking plate assembly and connector assembly to be mounted on the manifold along with the manifold base model no.

Example:
- **SS5YJ7-21P-07-Q** ····· 1 pc. (Manifold base)
- ∗ **SYJ7123-5LOU-C8-Q** ····· 3 pcs. (Valve)
- ∗ **SYJ7223-5LOU-C8-Q** ····· 3 pcs. (Valve)
- ∗ **SYJ7000-21-3A-Q** ····· 1 pc. (Blanking plate assembly)
- ∗ **SY3000-37-3A** ····· 3 pcs. (Connector assembly)
- ∗ **SY3000-37-4A** ····· 3 pcs. (Connector assembly)

∗ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

∗ Use manifold specification sheet.

## How to Order Valve

**Rated voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

**Light/surge voltage suppressor**

| | |
|---|---|
| Z | With light/surge voltage suppressor |
| U | With light/surge voltage suppressor (Non-polar type) |

Note) Z: Positive common specifications only.

**For DC** SYJ7 [1] 23 — [5] LO [Z] [ ] — [01] — Q

**Type of actuation**

| | |
|---|---|
| 1 | 2 position single |
| 2 | 2 position double |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |

**A, B port size**

| Symbol | Port size |
|---|---|
| 01 | 1/8 |
| C6 | One-touch fitting for ø6 |
| C8 | One-touch fitting for ø8 |
| N7 | One-touch fitting for ø1/4" |
| N9 | One-touch fitting for ø5/16" |

**Manual override**

| | |
|---|---|
| - | Non-locking push type |
| D | Push-turn locking slotted type |
| E | Push-turn locking lever type |

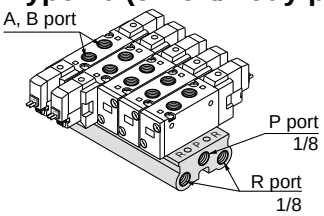
## How to Order Connector Assembly

**For 12, 24 VDC**

| | |
|---|---|
| Single solenoid | SY3000-37-3A |
| Double solenoid, 3 position type | SY3000-37-4A |
| Single solenoid, individual SUP, EXH spacer | SY3000-37-3A |
| Double solenoid, 3 position individual SUP/EXH spacer | SY3000-37-6A |
| Interface regulator for single solenoid | SY3000-37-3A |
| Double solenoid, 3 position interface regulator | SY3000-37-6A |
| 3 port adaptor plate | SY3000-37-3A |

## Manifold Standard /Common SUP/Common EXH

### Type 20 (5 Port/Body ported)




**How to Order**

**SS5YJ7–20– 05 – -Q**

**Stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **15** | 15 stations |

**P, R port thread type**

| | |
|---|---|
| **-** | Rc |
| **00F** | G |
| **00N** | NPT |
| **00T** | NPTF |

Note) For more than 6 stations, supply air to both sides of P port and exhaust air from both sides of R port.

**Applicable solenoid valve**

SYJ7□20-□□□□-$^{01}_{C8}$C6-Q

SYJ7□23-□□□□-$^{01}_{C8}$C6-Q

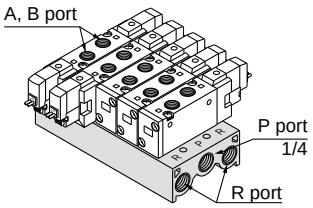
**Applicable blanking plate assembly**

SYJ7000-21-1A-1-Q

**Applicable individual EXH spacer assembly**

SYJ7000-17-1A-Q

### Type 21 (5 Port/Body ported)




**How to Order**

**SS5YJ7–21– 05 – -Q**

**Stations**

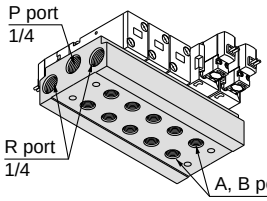
| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

**P, R port thread type**

| | |
|---|---|
| **-** | Rc |
| **00F** | G |
| **00N** | NPT |
| **00T** | NPTF |

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

### Type 40 (5 Port/Base mounted)




**How to Order**

**SS5YJ7–40– 05 – 01 -Q**

**Stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

**A, B port size**

| | |
|---|---|
| **01** | 1/8 |

**Thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

**Applicable solenoid valve**

SYJ7□40-□□□□-Q

SYJ7□43-□□□□-Q

**Applicable blanking plate assembly**

SYJ7000-21-1A-2-Q

**Applicable individual EXH spacer assembly**

SYJ7000-17-2A-Q

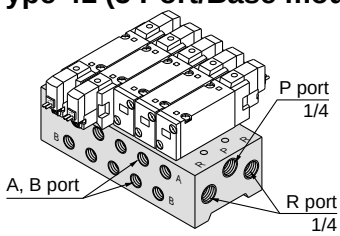
**Applicable individual SUP spacer assembly**

SYJ7000-16-2A-Q

**Applicable interface regulator**

ARBYJ7000-00-P-Q

### Type 41 (5 Port/Base mounted)




**How to Order**

**SS5YJ7–41– 05 – 01 -Q**

**Stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

**A, B port size**

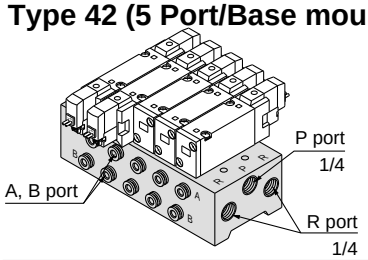
| | |
|---|---|
| **01** | 1/8 |

**Thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

### Type 42 (5 Port/Base mounted)




**How to Order**

**SS5YJ7–42– 05 – C6 -Q**

**Stations**

| | |
|---|---|
| **02** | 2 stations |
| **:** | : |
| **20** | 20 stations |

**A, B port size**

| | |
|---|---|
| **C6** | One-touch fitting for ø6 |
| **C8** | One-touch fitting for ø8 |
| **N7** | One-touch fitting for ø1/4" |
| **N9** | One-touch fitting for ø5/16" |

**Thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

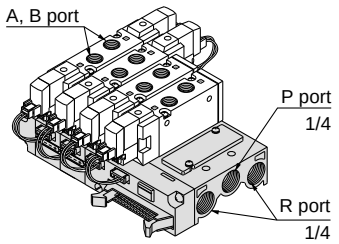
Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

**Applicable interface regulator**

ARBYJ7000-00-P-Q

## Flat Ribbon Cable Manifold /Common SUP/Common EXH

### Type 21P (5 Port/Body ported)




**How to Order**

**SS5YJ7–21P– 05 – -Q**

**Stations**

| | |
|---|---|
| **03** | 3 stations |
| **:** | : |
| **12** | 12 stations |

**P, R port thread type**

| | |
|---|---|
| **-** | Rc |
| **00F** | G |
| **00N** | NPT |
| **00T** | NPTF |

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

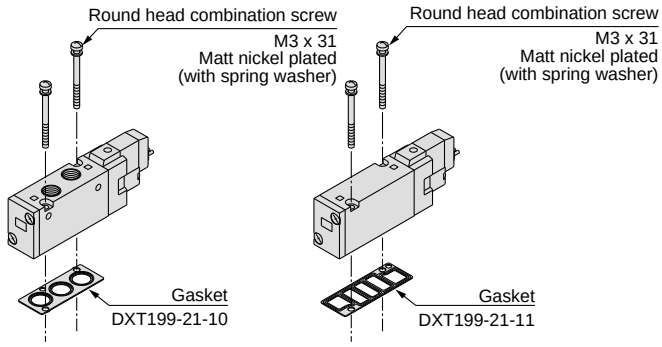
**Applicable solenoid valve**
**Refer to page 59.**

**Applicable blanking plate assembly**

SYJ7000-21-3A-Q

**Applicable connector assembly**
**Refer to page 59.**

## Combinations of Solenoid Valve, Manifold Gasket and Manifold Base




**Applicable manifold base**
Type SS5YJ7-20-Q
Type SS5YJ7-21-Q

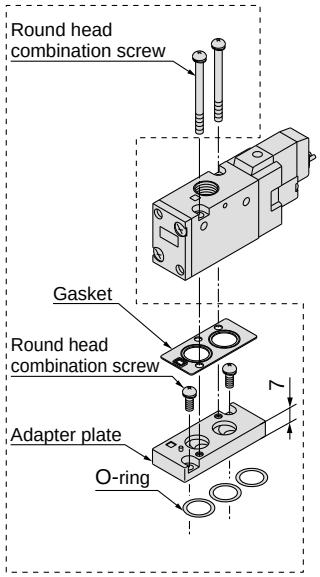
**Applicable manifold base**
**Sub-plate**
Type SS5YJ7-40-Q
Type SS5YJ7-41-Q
Type SS5YJ7-42-Q

## Mix Installation of the SYJ700 and the SYJ7000 Valves on the Same Manifold

- Use of an adapter plate makes it possible to mount Series SYJ700 on the manifold bases of series SYJ7000.
- When mounting the SYJ700 valve on the SYJ7000 manifold, the SYJ700 solenoid must be positioned on the same side of the manifold as a single solenoid SYJ700. (Refer to the figure below.)
- For base mounted style, the A port of the 3 port valve flows out the B port of manifold base.

### Adapter plate assembly SYJ700-3-1A-Q

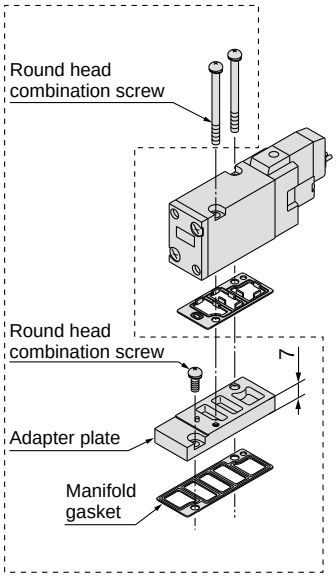
SYJ700 Series Body ported




**Applicable manifold base**
Type SS5YJ7-20
Type SS5YJ7-21

### Adapter plate assembly SYJ700-3-2A-Q

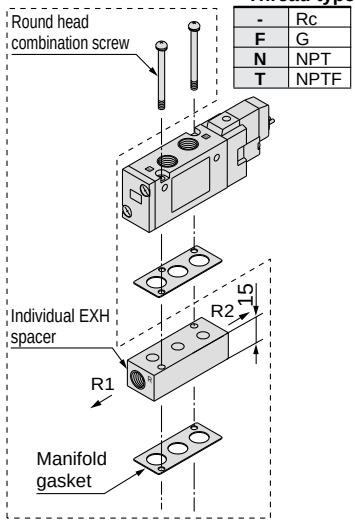
SYJ700 Series Base mounted




**Applicable manifold base**
Type SS5YJ7-40
Type SS5YJ7-41
Type SS5YJ7-42

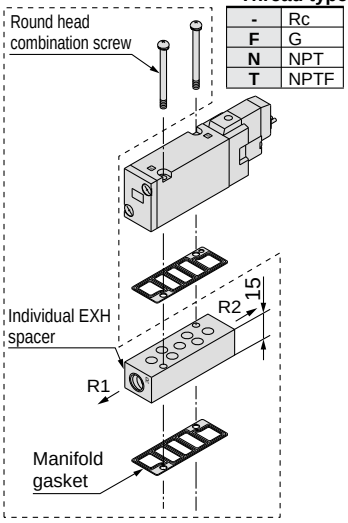
## Individual EXH Spacer Assembly

### SYJ7000-17-1□A-Q




**Applicable manifold base**
Type SS5YJ7-20-Q
Type SS5YJ7-21-Q

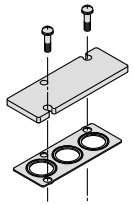
### SYJ7000-17-2□A-Q




**Applicable manifold base**
Type SS5YJ7-40-Q
Type SS5YJ7-41-Q
Type SS5YJ7-42-Q

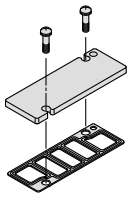
## Blanking Plate Assembly

### SYJ7000-21-1A-1-Q



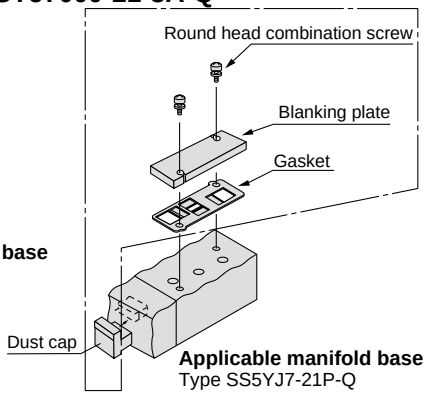
**Applicable manifold base**
Type SS5YJ7-20-Q
Type SS5YJ7-21-Q

### SYJ7000-21-1A-2-Q



**Applicable manifold base**
Type SS5YJ7-40-Q
Type SS5YJ7-41-Q
Type SS5YJ7-42-Q

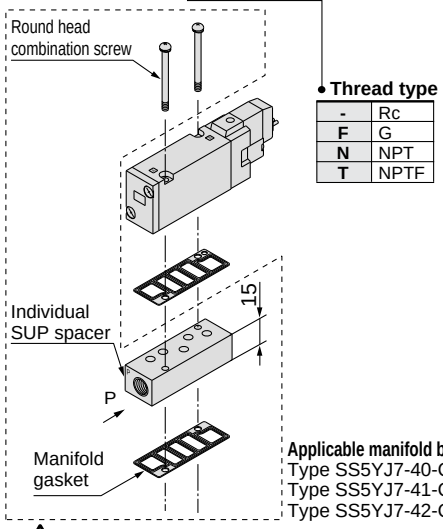
### SYJ7000-21-3A-Q




**Applicable manifold base**
Type SS5YJ7-21P-Q

## Individual SUP Spacer Assembly

### SYJ7000-16-2□A-Q

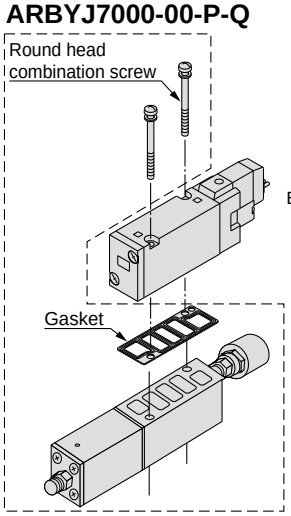



**Applicable manifold base**
Type SS5YJ7-40-Q
Type SS5YJ7-41-Q
Type SS5YJ7-42-Q

## Interface Regulator (P port regulation)

Spacer type regulating valve on manifold block can regulate the pressure to the valve individually.

### ARBYJ7000-00-P-Q




**Applicable manifold base**
Type SS5YJ7-40-Q
Type SS5YJ7-41-Q
Type SS5YJ7-42-Q

## ⚠ Caution

| Mounting screw tightening torques | Use caution to the assembly orientation for solenoid valves, gasket, and optional parts. |
|---|---|

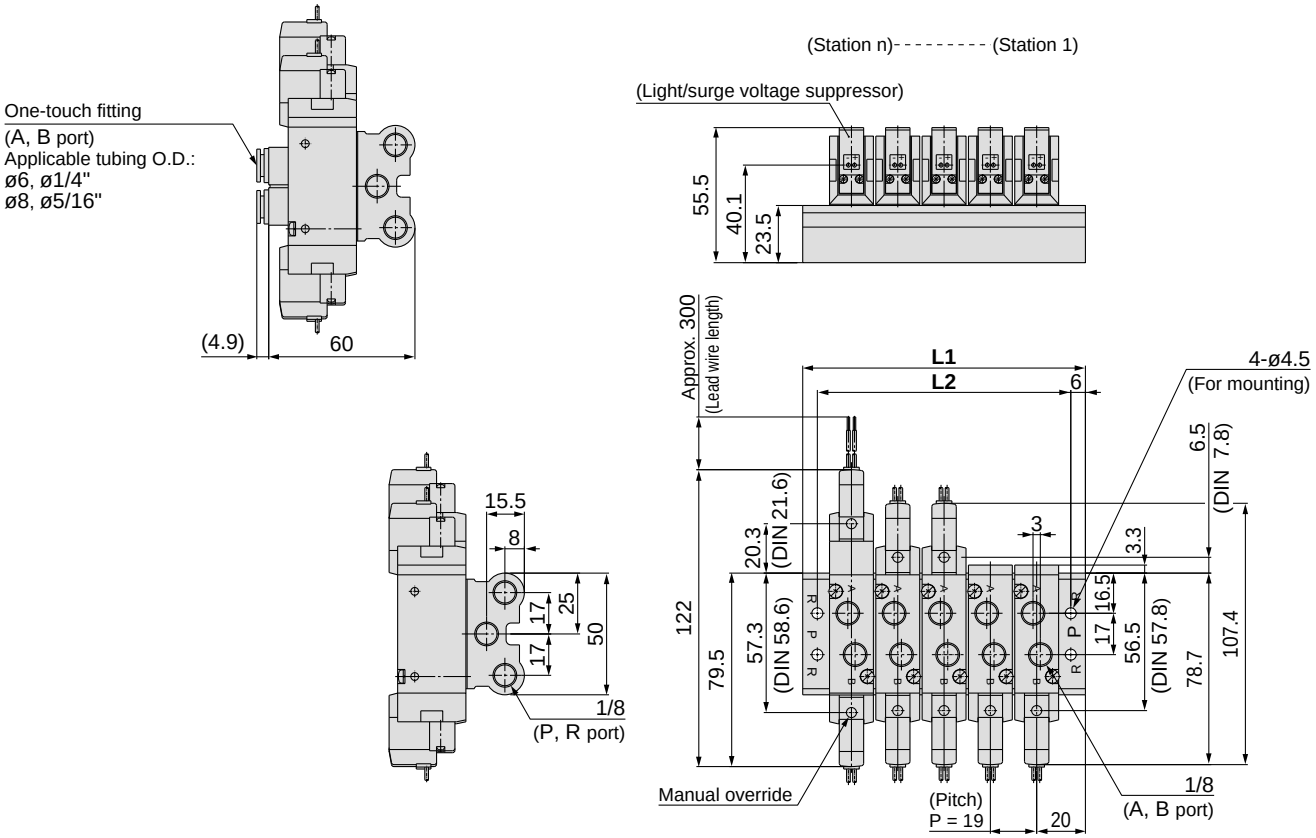
**M3: 0.8 N·m**

Refer to back page 12 prior to handling.

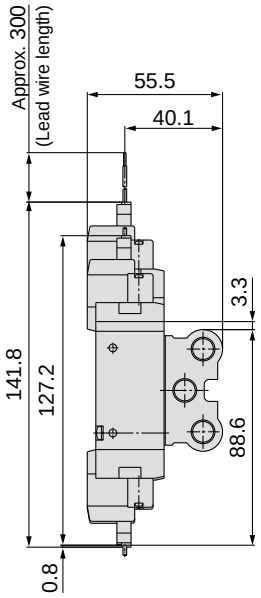
## Type 20: Top Proted/SS5YJ7-20-Stations-00□-Q

### Grommet (G)

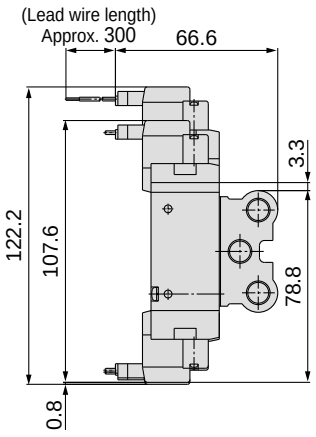
#### Built-in one-touch fitting



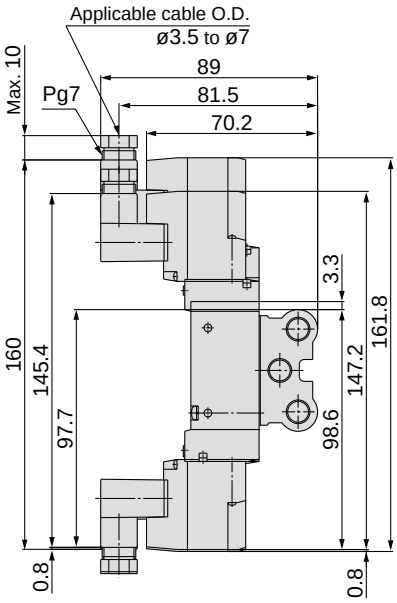

### L plug connector (L)



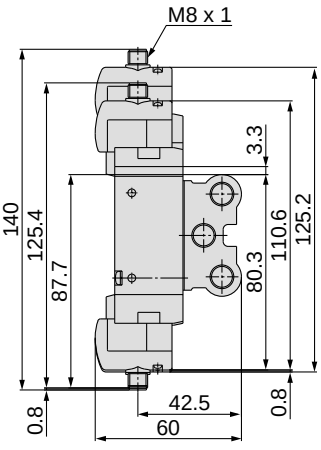

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)



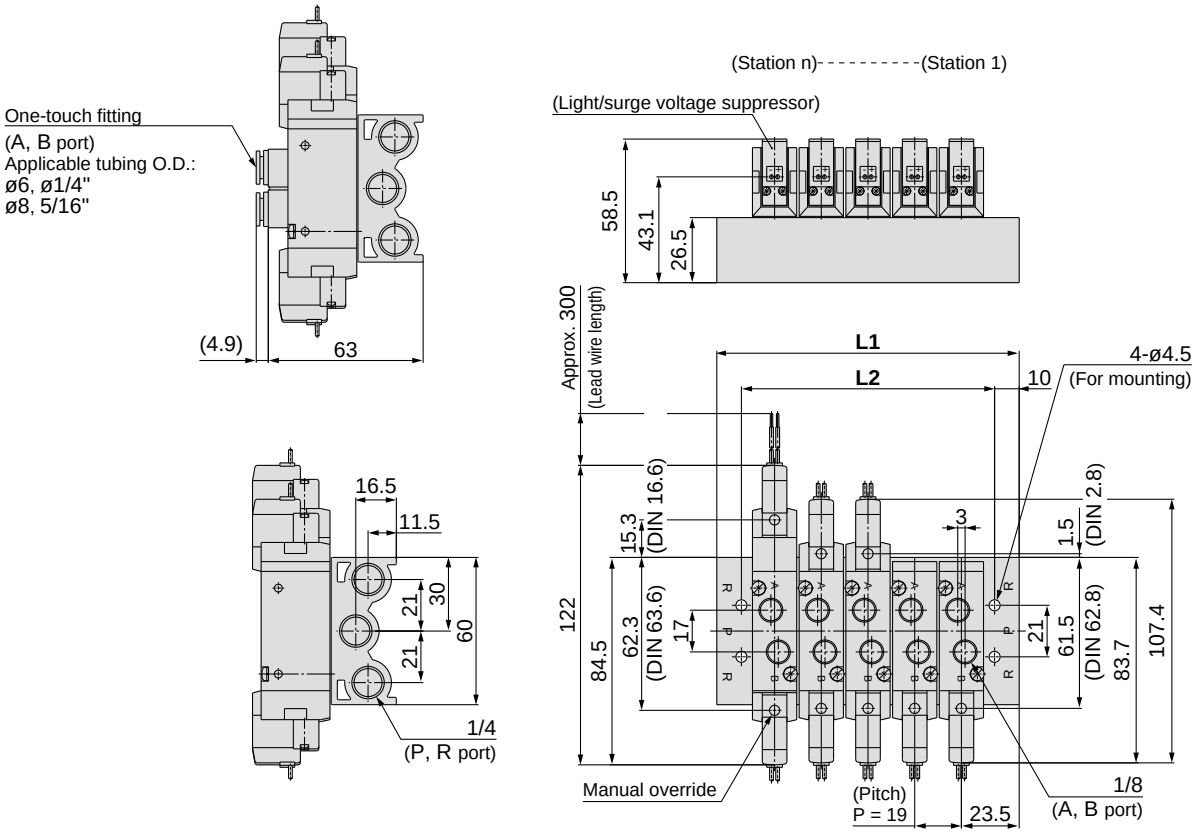

Refer to back page 11 for dimentions with connector cable.

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Station 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 59 | 78 | 97 | 116 | 135 | 154 | 173 | 192 | 211 | 230 | 249 | 268 | 287 | 306 |
| **L2** | 47 | 66 | 85 | 104 | 123 | 142 | 161 | 180 | 199 | 218 | 237 | 256 | 275 | 294 |

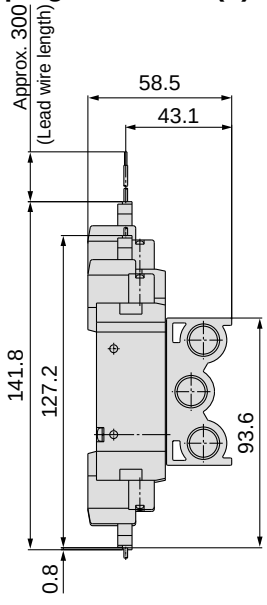
## Type 21: Top Ported/SS5YJ7-21-Stations (-00□)-Q

### Grommet (G)

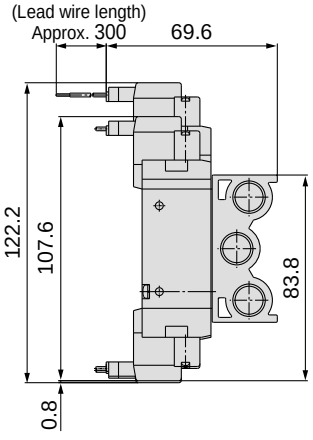
#### Built-in one-touch fitting



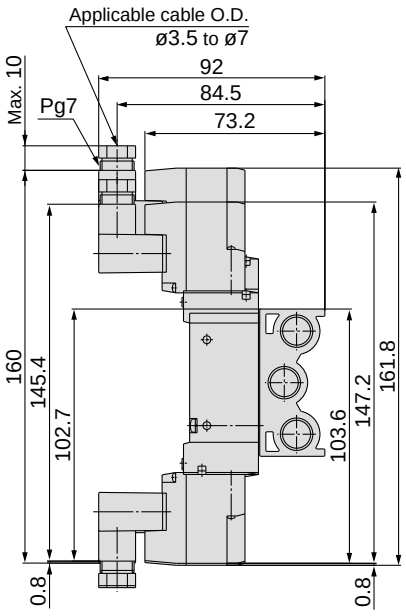

#### L plug connector (L)



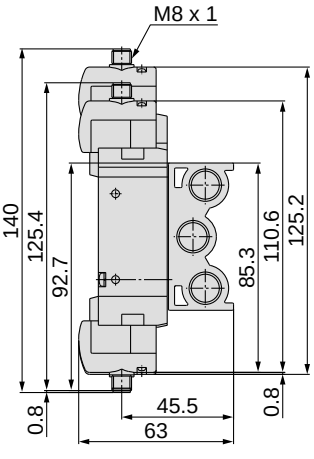

#### M plug connector (M)




#### DIN terminal (D)




#### M8 connector (WO)

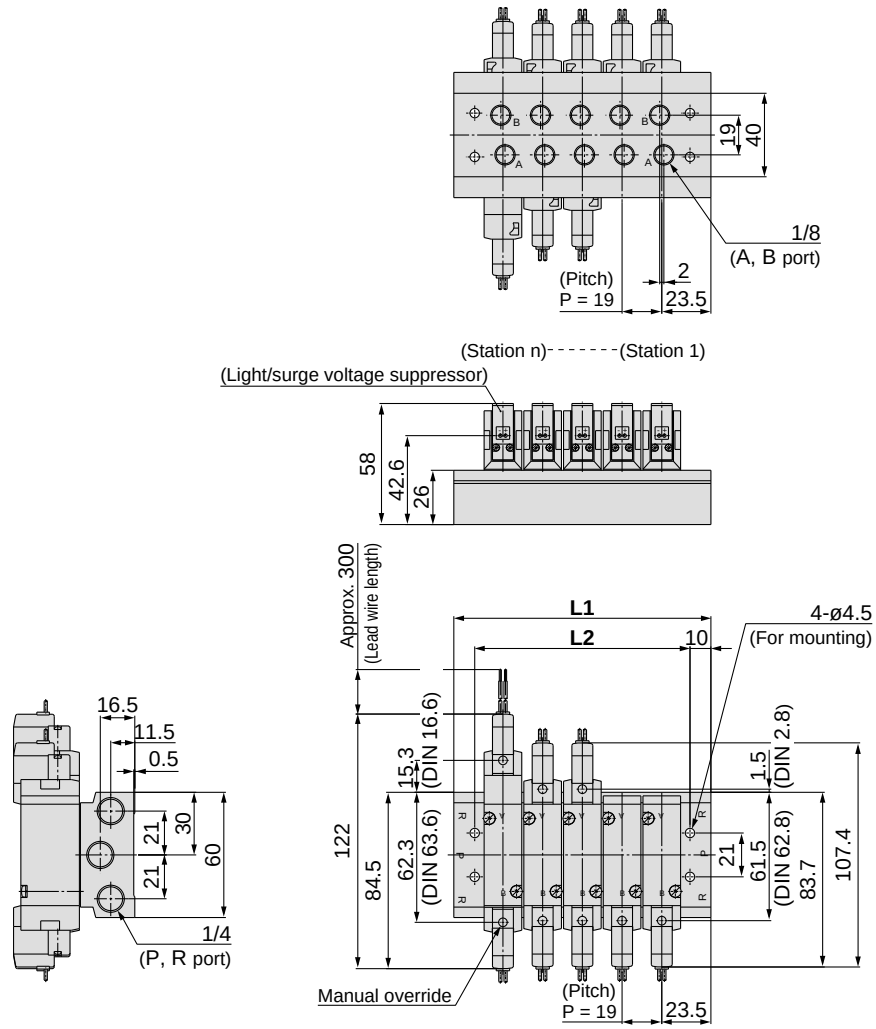



Refer to back page 11 for dimentions with connector cable.

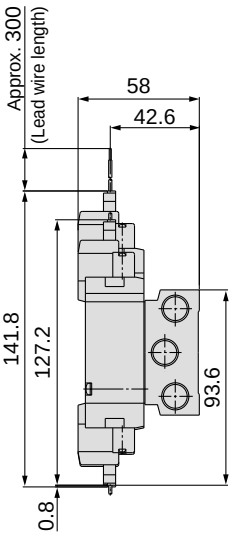
| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 66 | 85 | 104 | 123 | 142 | 161 | 180 | 199 | 218 | 237 | 256 | 275 | 294 | 313 | 332 | 351 | 370 | 389 | 408 |
| **L2** | 46 | 65 | 84 | 103 | 122 | 141 | 160 | 179 | 198 | 217 | 236 | 255 | 274 | 293 | 312 | 331 | 350 | 369 | 388 |

## Type 40: Bottom Ported/SS5YJ7-40-Stations-01□-Q

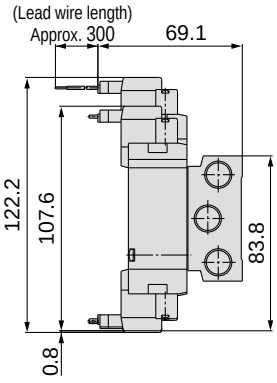
### Grommet (G)



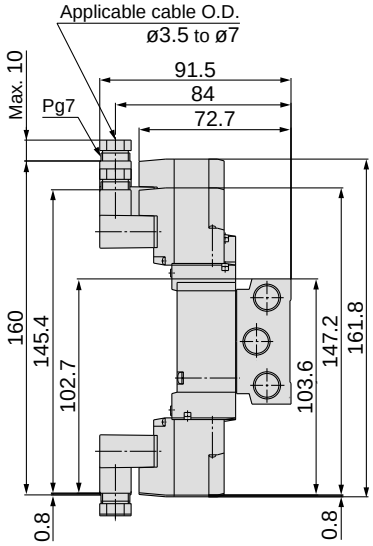

### L plug connector (L)



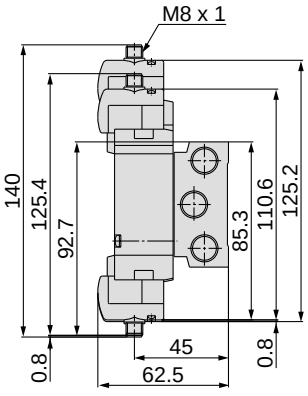

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)

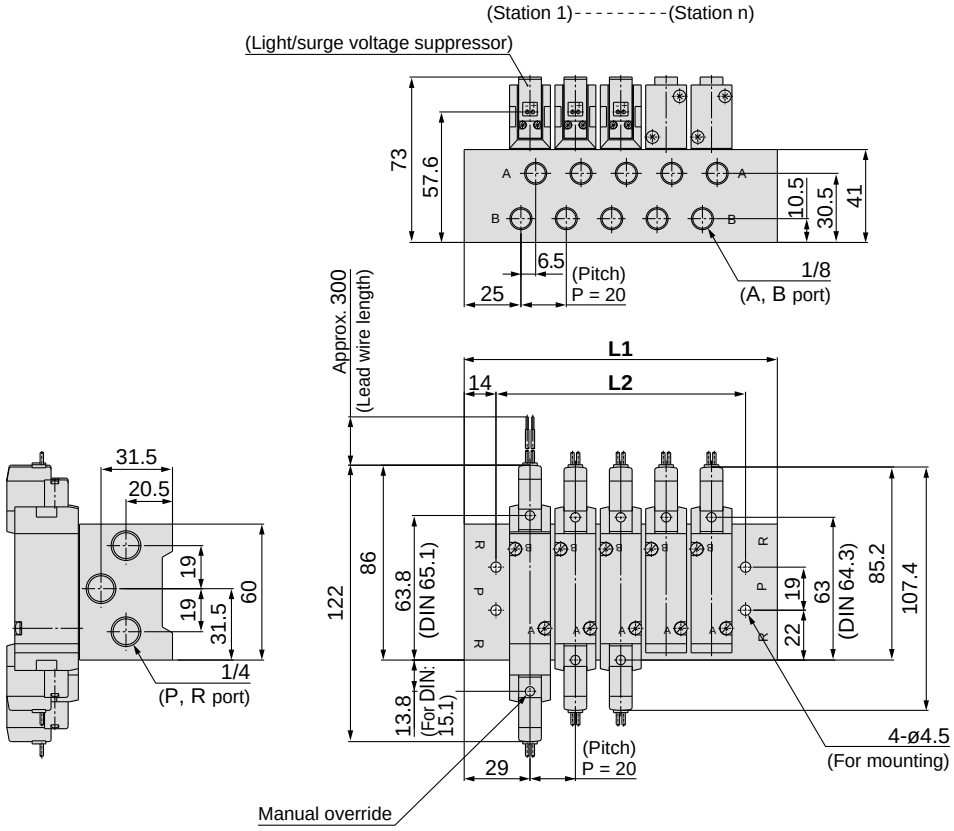



Refer to back page 11 for dimentions with connector cable.

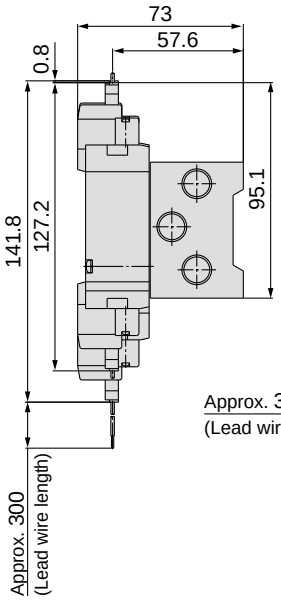
| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 66 | 85 | 104 | 123 | 142 | 161 | 180 | 199 | 218 | 237 | 256 | 275 | 294 | 313 | 332 | 351 | 370 | 389 | 408 |
| **L2** | 46 | 65 | 84 | 103 | 122 | 141 | 160 | 179 | 198 | 217 | 236 | 255 | 274 | 293 | 312 | 331 | 350 | 369 | 388 |

## Type 41: Side Ported/SS5YJ7-41-Stations-01□-Q

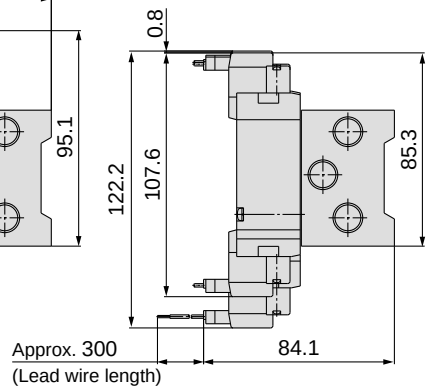
### Grommet (G)



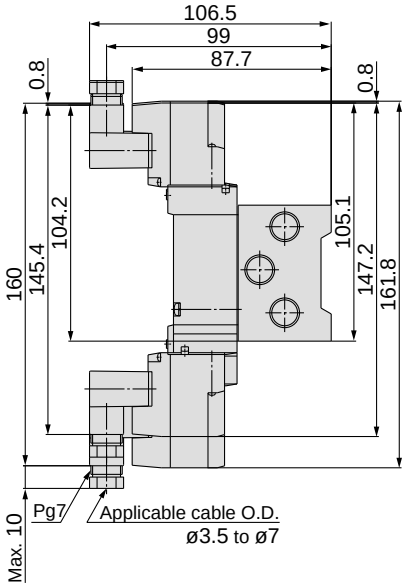

### L plug connector (L)



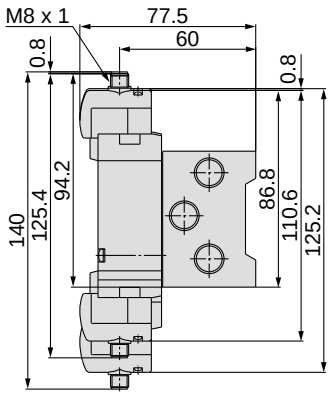

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)

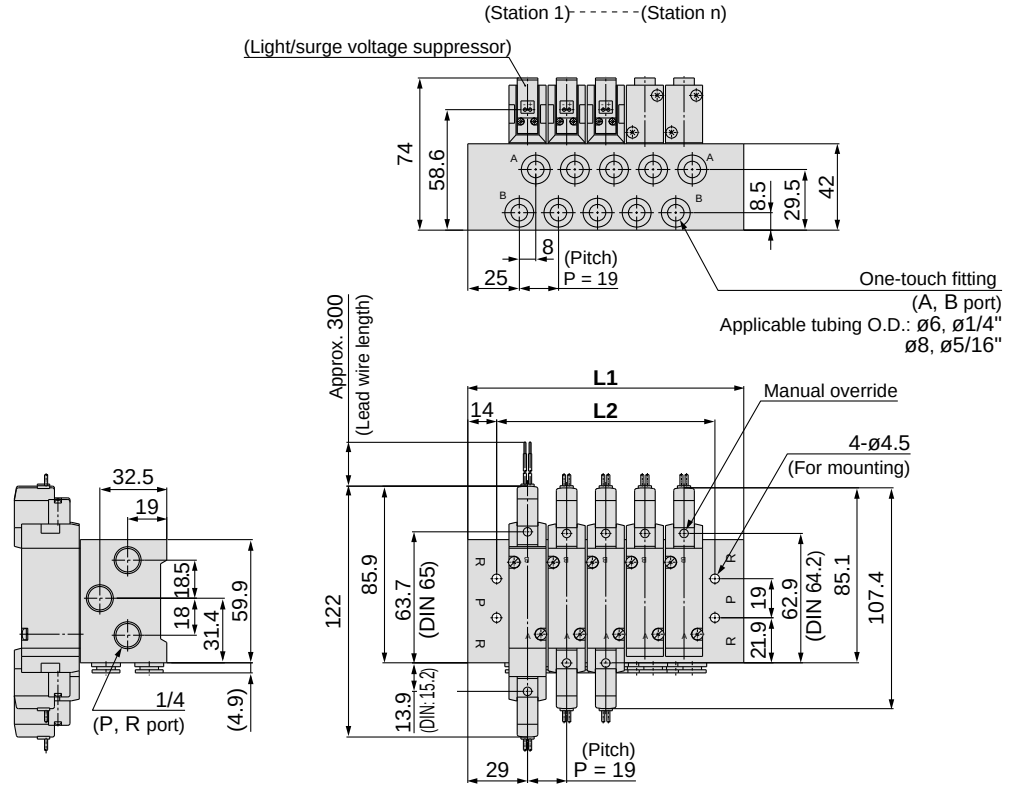



Refer to back page 11 for dimentions with connector cable.

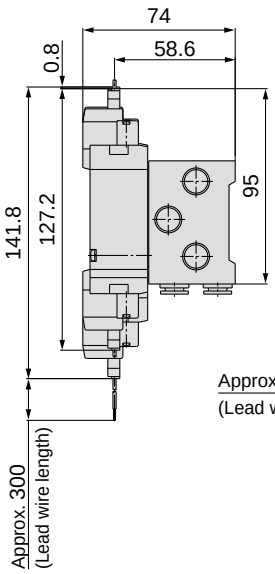
| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 78 | 98 | 118 | 138 | 158 | 178 | 198 | 218 | 238 | 258 | 278 | 298 | 318 | 338 | 358 | 378 | 398 | 418 | 438 |
| **L2** | 50 | 70 | 90 | 110 | 130 | 150 | 170 | 190 | 210 | 230 | 250 | 270 | 290 | 310 | 330 | 350 | 370 | 390 | 410 |

## Type 42: Side Ported/SS5YJ7-42-Stations-C6,N7 C8,N9 □-Q

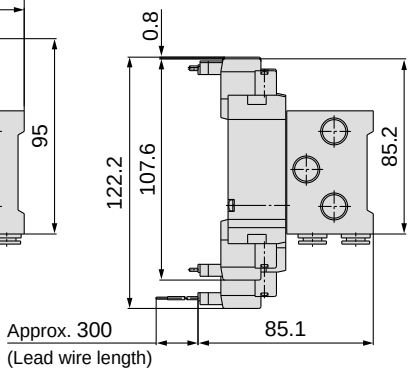
### Grommet (G)



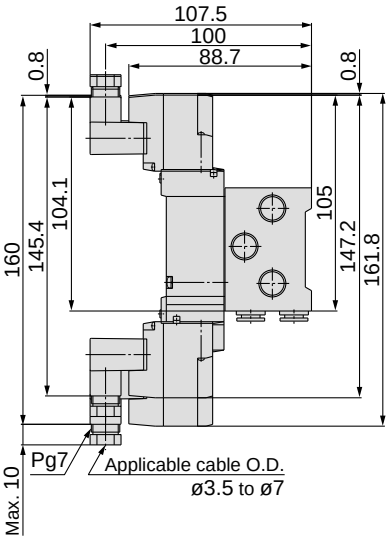

### L plug connector (L)



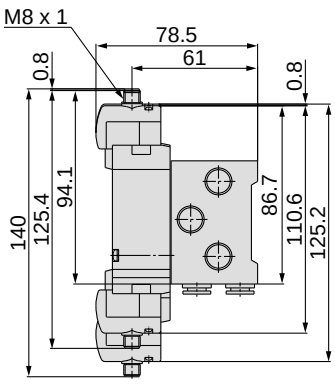

### M plug connector (M)




### DIN terminal (D)




### M8 connector (WO)

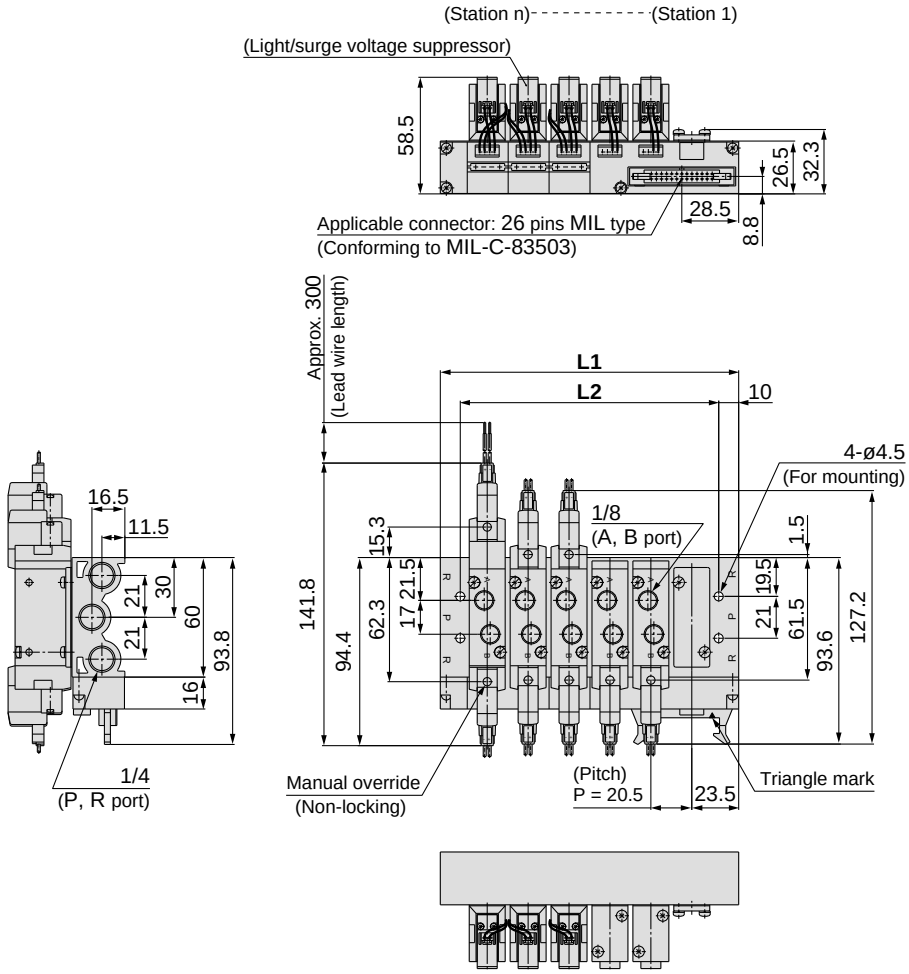



Refer to back page 11 for dimentions with connector cable.

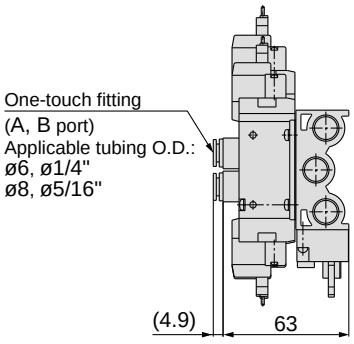
| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 77 | 96 | 115 | 134 | 153 | 172 | 191 | 210 | 229 | 248 | 267 | 286 | 305 | 324 | 343 | 362 | 381 | 400 | 419 |
| **L2** | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 |

## Flat Ribbon Cable Manifold

### SS5YJ7-21P- Stations (-00□)-Q




**For built-in one-touch fitting**




| Station n | Station 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Station 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 88 | 108.5 | 129 | 149.5 | 170 | 190.5 | 211 | 231.5 | 252 | 272.5 |
| **L2** | 68 | 88.5 | 109 | 129.5 | 150 | 170.5 | 191 | 211.5 | 232 | 252.5 |

# 4/5 Port Air Operated Valve
# *Series SYJA3000*

## How to Order

**Bracket**

| | |
|---|---|
| - | Without bracket |
| F | With bracket |

**Body ported** SYJA3 [1] 20 − M3 − [ ]

**Base mounted (4 port)** SYJA3 [2] 30 (Manifold use only)

**Base mounted (5 port)** SYJA3 [2] 40 − [ ]

**Port size**

| | |
|---|---|
| - | Without sub-plate |
| M5 | M5 port With sub-plate |

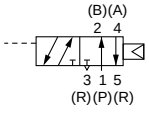
**Type of actuation**

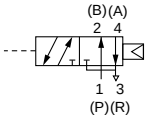
| | |
|---|---|
| 1 | 2 position single |
| 2 | 2 position double |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |

**JIS Symbol**

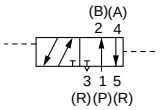
**5 port** **4 port**

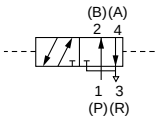
2 position single



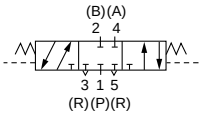



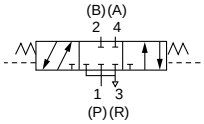

2 position double



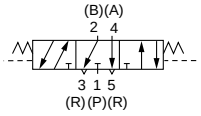



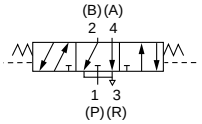

3 position closed center



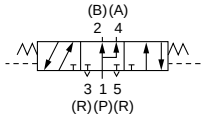



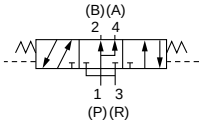

3 position exhaust center




3 position pressure center




## How to Order Manifold Base

Same manifolds as series SYJ3000 are prepared.

**SS5YJA3−** Fill the same as SS5YJ3

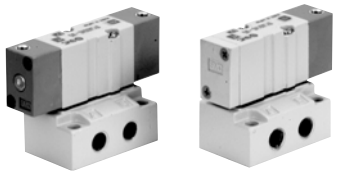
Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

(Example)
**SS5YJA3-41-03-M5** ·····1 pc.
∗SYJA3140 ·····1 pc.
∗SYJA3240 ·····1 pc.
∗SYJ3000-21-2A ·····1 pc.

∗ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

**⚠ Caution**

Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.



Base mounted

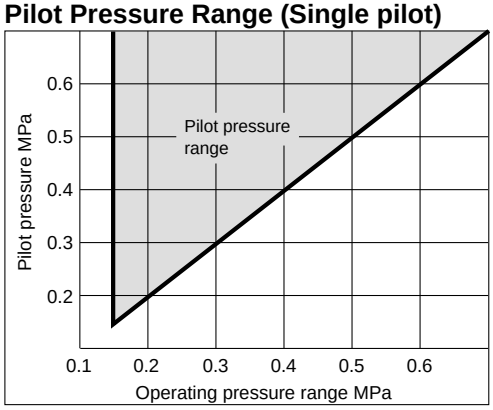
Body ported

## Specifications

| | | |
|---|---|---|
| **Fluid** | | Air |
| **Operating pressure range (MPa)** | **2 position single** | 0.15 to 0.7 |
| | **2 position double** | -100 kPa to 0.7 |
| | **3 position** | -100 kPa to 0.7 |
| **Pilot pressure range (MPa)** Note 1) | **2 position single** | Operating pressure to 0.7 |
| | **2 position double** | 0.1 to 0.7 |
| | **3 position** | 0.2 to 0.7 |
| **Ambient and fluid temperature (°C)** | | –10 to 50 (No freezing. Refer to back page 3.) |
| **Lubrication** | | Not required |
| **Mounting orientation** | | Unrestricted |
| **Impact/Vibration resistance (m/s²)** Note 2) | | 300/50 |

Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port {1(P)} for activation.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve, when pilot signal is ON and OFF. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

### Pilot Pressure Range (Single pilot)




## With Bracket

| | |
|---|---|
| **Air operated valve** | SYJA3□20-M3-F |

The mounting bracket for the 2 position double solenoid and 3 position is supplied unattached.

## Flow Characteristics/Weight

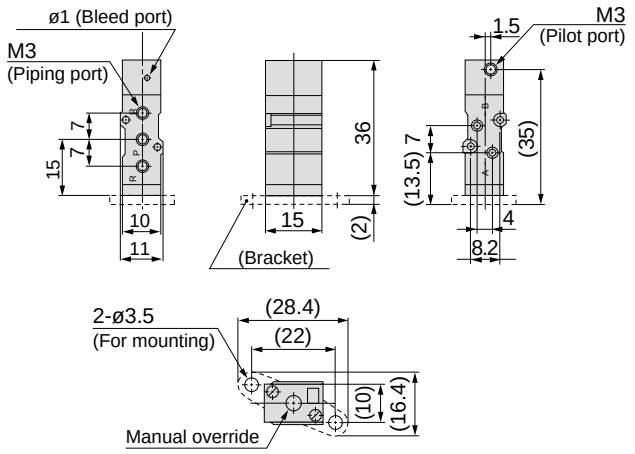
∗ Refer to the memo for changed contents.

| Valve model | | Type of actuation | | Port size | Pilot port size | Weight (g) Note 3) Grommet | Effective area mm² | Flow characteristics Note 2) 1→4/2 (P→A/B) C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | 4/2→5/3 (A/B→EA/EB) C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 port Base mounted (with sub-plate) | **SYJA3□40-M5** | 2 position | Single | M5 | M3 | 48 (22) | – | 0.46 | 0.36 | 0.12 | 122 | 0.46 | 0.35 | 0.12 | 121 |
| | | | Double | | | 51 (25) | | | | | | | | | |
| | | 3 position | Closed center | | | 54 (28) | | 0.47 | 0.33 | 0.12 | 122 | 0.47 | 0.31 | 0.12 | 120 |
| | | | Exhaust center | | | | | 0.36 | 0.39 | 0.10 | 97 | 0.59 [0.40] | 0.43 [0.33] | 0.16 [0.11] | 164 |
| | | | Pressure center | | | | | 0.58 [0.32] | 0.42 [0.33] | 0.16 [0.080] | 160 [83] | 0.46 | 0.32 | 0.11 | [104] 118 |
| Body ported | **SYJA3□20-M3** | 2 position | Single | M3 | M3 | 22 | 0.9 | | | | | | | | |
| | | | Double | | | 25 | | | | | | | | | |
| | | 3 position | Closed center | | | 28 | | | | | | | | | |
| | | | Exhaust center | | | | | | | | | | | | |
| | | | Pressure center | | | | | | | | | | | | |
| 4 Port Base Mounted (For manifold) Note 1) | **SYJA3□30** | 2 position | Single | – | M3 | 22 | | | | | | | | | |
| | | | Double | | | 25 | | | | | | | | | |
| | | 3 position | Closed center | | | 28 | | | | | | | | | |
| | | | Exhaust center | | | | | | | | | | | | |
| | | | Pressure center | | | | | | | | | | | | |

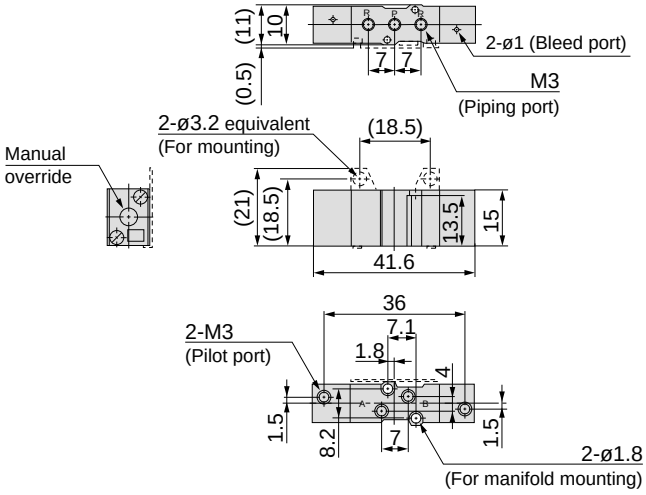
Note 1) Value when used on a manifold. Refer to page 69 for details.
Note 2) [ ]: denotes normal position.
Note 3) ( ): Without sub-plate.
Note 4) 5 port, base mounted without sub-plate: SYJA3□40
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

## Dimensions/Body Ported

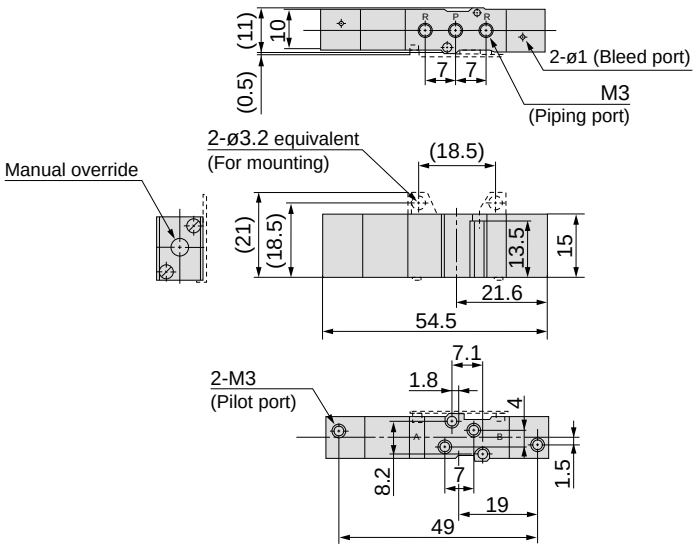
### 2 position single: SYJA3120-M3(-F)




### 2 position double: SYJA3220-M3(-F)

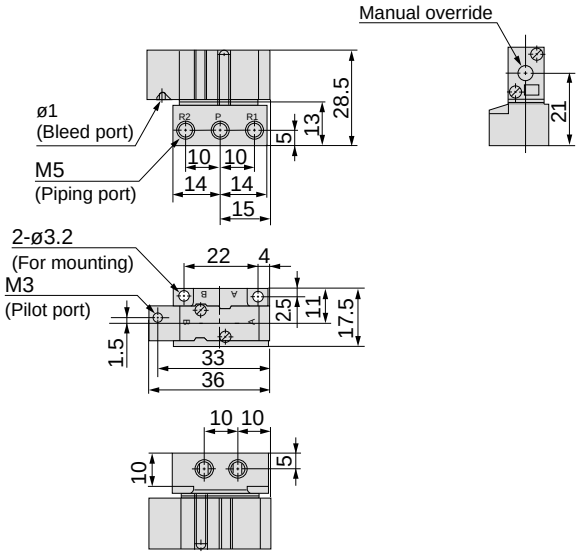



### 3 position closed center/exhaust center/pressure center SYJA3$^{3}_{4}_{5}$20-M3(-F)

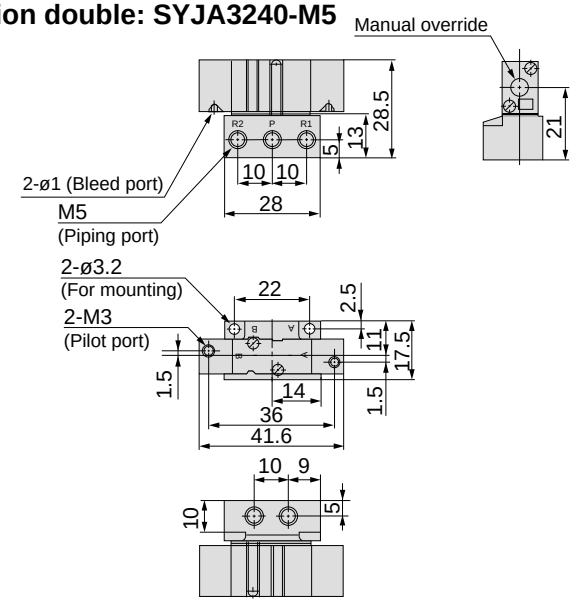



## Dimensions/Base Mounted

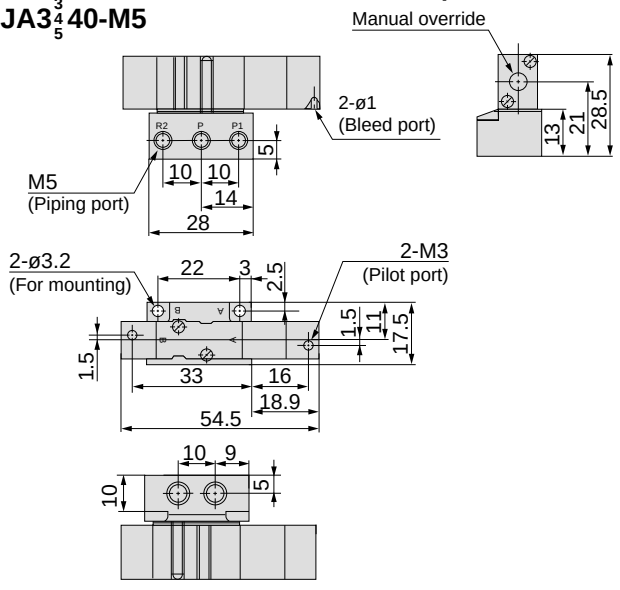
### 2 position single: SYJA3140-M5




### 2 position double: SYJA3240-M5




### 3 position closed center/exhaust center/pressure center SYJA3$^{3}_{4}_{5}$40-M5



# 4/5 Port Air Operated Valve

# *Series SYJA5000*

## How to Order

**A, B port size**

| | |
|---|---|
| **M5** | M5 |
| **C4** | One-touch fitting for ø4 |
| **C6** | One-touch fitting for ø6 |

**Bracket**

| | |
|---|---|
| **-** | Without bracket |
| **F** | With bracket |

**Body ported** SYJA5 **1** 20 – **M5** – □

**Base mounted** SYJA5 **2** 40 – □ □

**Type of actuation**

| | |
|---|---|
| **1** | 2 position single |
| **2** | 2 position double |
| **3** | 3 position closed center |
| **4** | 3 position exhaust center |
| **5** | 3 position pressure center |

**Port size**

| | |
|---|---|
| **-** | Without sub-plate |
| **01** | 1/8<br>With sub-plate |

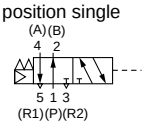
**Thread type**

| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

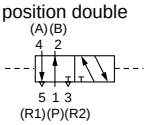
**JIS Symbol**

**Body ported**

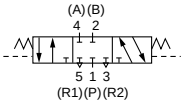
2 position single



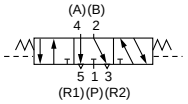

2 position double



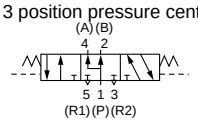

3 position closed center




3 position exhaust center

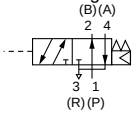



3 position pressure center

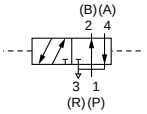



**Base mounted**

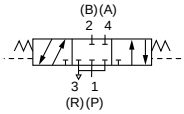
2 position single



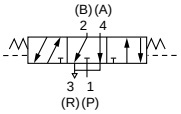

2 position double



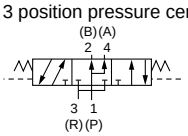

3 position closed center




3 position exhaust center




3 position pressure center




## How to Order Manifold Base

Same manifolds as series SYJ5000 are prepared.

**SS5YJA5 –** Fill the same as SS5YJ5.

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

(Ex.)

**SS5YJA5-42-03-01** ·····1 set

∗ SYJA5140 ·····1 set

∗ SYJA5240 ·····1 set

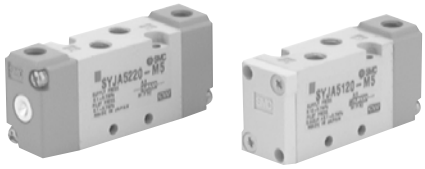
∗ SYJ5000-21-1A ·····1 set

∗ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

### ⚠ Caution

Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.

Base mounted



Body ported

## Specifications

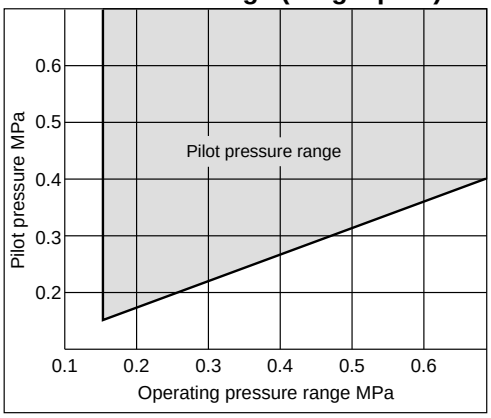
| Fluid | | Air |
|---|---|---|
| Operating pressure range (MPa) | 2 position single | 0.15 to 0.7 |
| | 2 position double | -100 kPa to 0.7 |
| | 3 position | -100 kPa to 0.7 |
| Pilot pressure range (MPa) Note 1) | 2 position single | (0.4 x P+0.1) to 0.7 P: Operating pressure |
| | 2 position double | 0.1 to 0.7 |
| | 3 position | 0.15 to 0.7 |
| Ambient and fluid temperature (°C) | | –10 to 50 (No freezing. Refer to back page 3.) |
| Lubrication | | Not required |
| Mounting orientation | | Unrestricted |
| Impact/Vibration resistance (m/s²) Note 2) | | 300/50 |

Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port {1(P)} for activation.

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve, when pilot signal is ON and OFF. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

### Pilot Pressure Range (Single pilot)




## With Bracket

| Air operated valve | SYJA5120-M5-F |
|---|---|

The mounting brcket is supplied unttached.

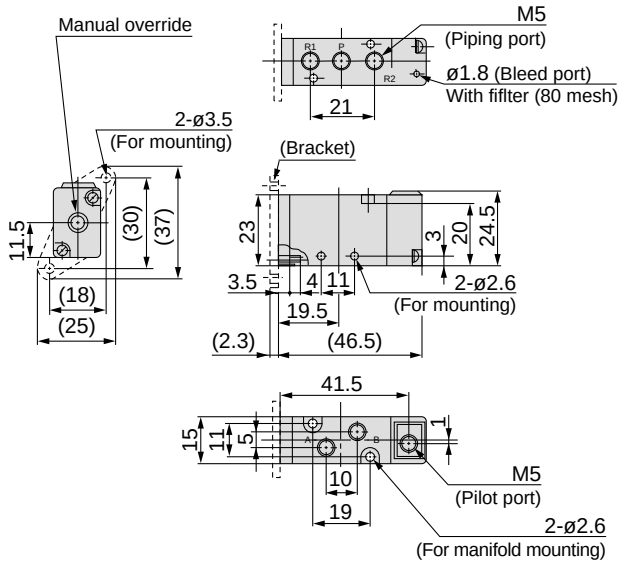
## Flow Characteristics/Weight

| Valve model | | Type of actuation | | Port size | Flow characteristics Note 1) 1→4/2 (P→A/B) C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | 4/2→5/3 (A/B→EA/EB) C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | Pilot port size | Note 2) Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Body ported | SYJA5□20-M5 | 2 position | Single | M5 | 0.47 | 0.41 | 0.13 | 129 | 0.47 | 0.41 | 0.13 | 129 | M5 | 45 |
| | | | Double | | | | | | | | | | | 60 |
| | | 3 position | Closed center | | 0.49 | 0.44 | 0.13 | 137 | 0.44 | 0.40 | 0.12 | 120 | | 70 |
| | | | Exhaust center | | 0.46 | 0.37 | 0.12 | 123 | 0.47 [0.39] | 0.43 [0.35] | 0.13 [0.10] | 131 [102] | | |
| | | | Pressure center | | 0.49 [0.39] | 0.51 [0.38] | 0.14 [0.10] | 145 [105] | 0.45 | 0.42 | 0.12 | 124 | | |
| | SYJA5□20-C4 | 2 position | Single | A, B port: C4 (One-touch fitting for ø4) P, R port: M5 | 0.69 | 0.39 | 0.18 | 186 | 0.44 | 0.39 | 0.12 | 119 | | 52 |
| | | | Double | | | | | | | | | | | 67 |
| | | 3 position | Closed center | | 0.69 | 0.40 | 0.19 | 188 | 0.43 | 0.40 | 0.12 | 117 | | 77 |
| | | | Exhaust center | | 0.56 | 0.40 | 0.15 | 152 | 0.41 [0.41] | 0.37 [0.37] | 0.10 [0.11] | 109 [109] | | |
| | | | Pressure center | | 0.57 [0.41] | 0.40 [0.37] | 0.15 [0.10] | 155 [109] | 0.41 | 0.37 | 0.10 | 109 | | |
| | SYJA5□20-C6 | 2 position | Single | A, B port: C6 (One-touch fitting for ø6) P, R port: M5 | 0.70 | 0.36 | 0.19 | 185 | 0.47 | 0.40 | 0.12 | 128 | | 52 |
| | | | Double | | | | | | | | | | | 67 |
| | | 3 position | Closed center | | 0.72 | 0.37 | 0.19 | 192 | 0.44 | 0.34 | 0.12 | 115 | | 77 |
| | | | Exhaust center | | 0.67 | 0.54 | 0.19 | 204 | 0.41 [0.41] | 0.38 [0.38] | 0.11 [0.11] | 110 [110] | | |
| | | | Pressure center | | 0.82 [0.44] | 0.41 [0.39] | 0.23 [0.12] | 225 [119] | 0.41 | 0.36 | 0.11 | 108 | | |
| Base mounted (with sub-plate) | SYJA5□40-01 | 2 position | Single | 1/8 | 0.79 | 0.21 | 0.19 | 190 | 0.83 | 0.32 | 0.21 | 214 | M5 | 79 (45) |
| | | | Double | | | | | | | | | | | 94 (60) |
| | | 3 position | Closed center | | 0.80 | 0.28 | 0.18 | 201 | 0.86 | 0.34 | 0.20 | 224 | | 104(70) |
| | | | Exhaust center | | 0.71 | 0.26 | 0.18 | 176 | 1.1 [0.60] | 0.24 [0.44] | 0.26 [0.18] | 270 [168] | | |
| | | | Pressure center | | 0.99 [0.47] | 0.29 [0.38] | 0.24 [0.12] | 250 [126] | 0.72 | 0.38 | 0.18 | 193 | | |

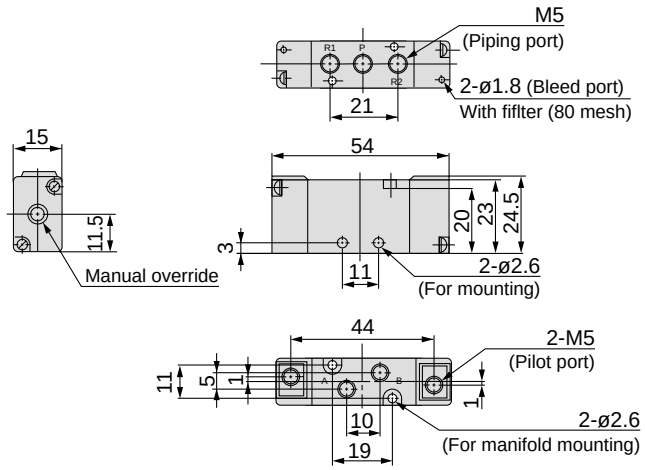
Note 1) [ ]: denotes normal position.
Note 2) ( ): Without sub-plate.
Note 3) Model No. for 5 port base mounted style without sub-plate is SYJA5□40.
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

## Dimensions/Body Ported

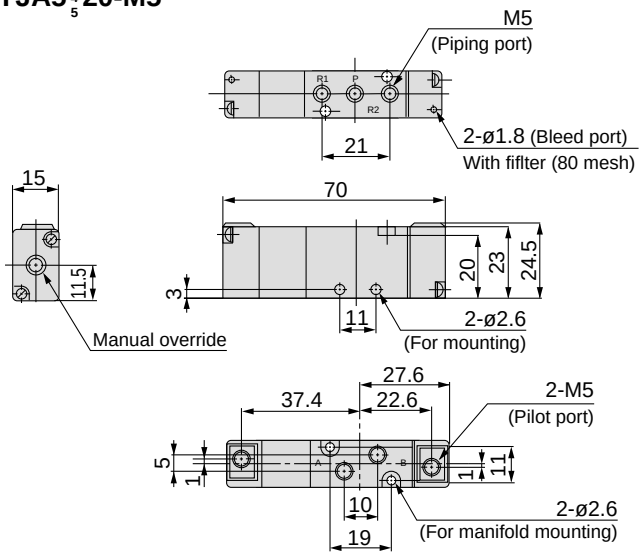
### 2 position single: SYJA5120-M5(-F)




### 2 position double: SYJA5220-M5

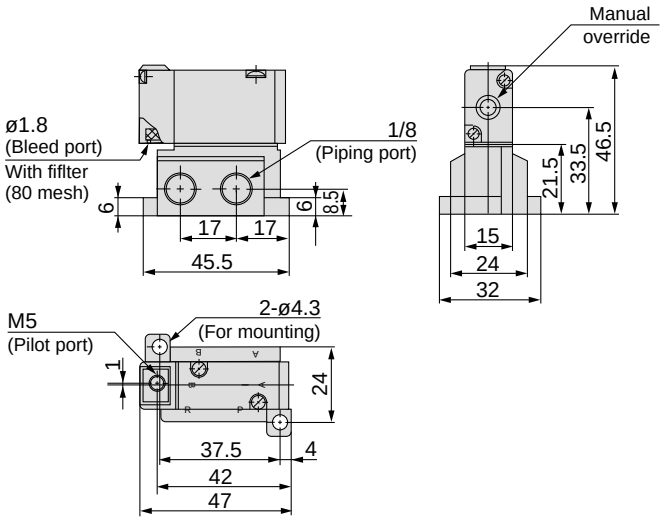



### 3 position closed center/exhaust center/pressure center SYJA5$^{3}_{4}_{5}$20-M5

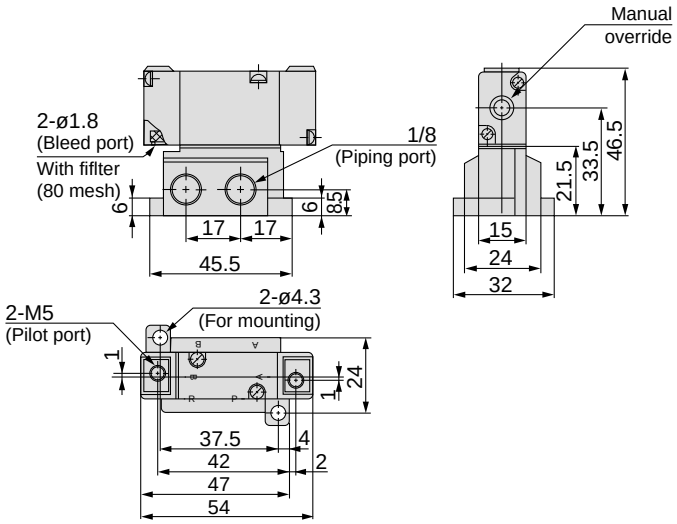



## Dimensions/Base Mounted

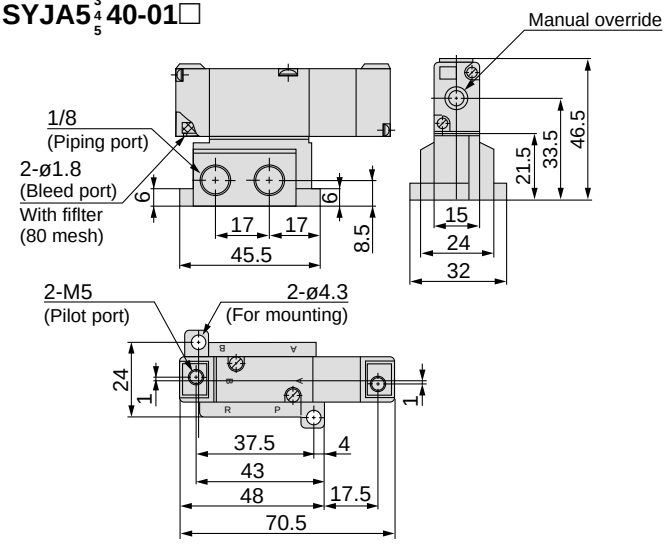
### 2 position single: SYJA5140-01□




### 2 position double: SYJA5240-01□




### 3 position closed center/exhaust center/pressure center SYJA5$^{3}_{4}_{5}$40-01□



# 4/5 Port Air Operated Valve
# *Series SYJA7000*

## How to Order

**A, B port size**

| | |
|---|---|
| **01** | 1/8 |
| **C6** | One-touch fitting for ø6 |
| **C8** | One-touch fitting for ø8 |

**Bracket**

| | |
|---|---|
| **-** | Without bracket |
| **F** | With bracket |

**Body ported** SYJA7 **1** 20 – **01** □ – □

**Base mounted** SYJA7 **2** 40 – □ □

**Type of actuation**

| | |
|---|---|
| **1** | 2 position single |
| **2** | 2 position double |
| **3** | 3 position closed center |
| **4** | 3 position exhaust center |
| **5** | 3 position pressure center |

**Port size**

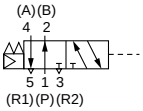
| | |
|---|---|
| **-** | Without sub-plate |
| **01** | 1/8 With sub-plate |
| **02** | 1/4 With sub-plate |

**Thread type**

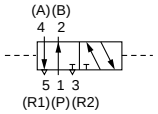
| | |
|---|---|
| **-** | Rc |
| **F** | G |
| **N** | NPT |
| **T** | NPTF |

**JIS Symbol**
**Body ported**

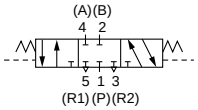
2 position single



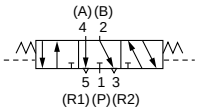

2 position double



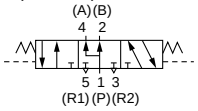

3 position closed center




3 position exhaust center

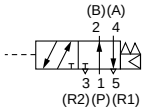



3 position pressure center

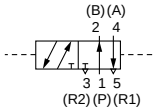



**Base mounted**

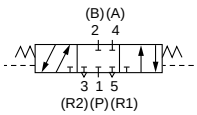
2 position single



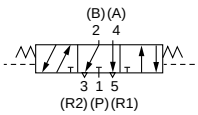

2 position double



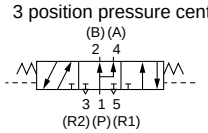

3 position closed center




3 position exhaust center




3 position pressure center




## How to Order Manifold Base

Same manifolds as series SYJ7000 are prepared.

**SS5YJA7 –** Fill the same as SS5YJ7.

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

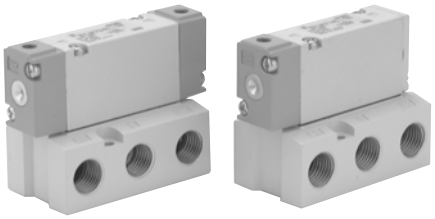
(Ex.)
**SS5YJA7-41-03-01** ·····1 pc.
∗SYJA7140 ·····1 pc.
∗SYJA7240 ·····1 pc.
∗SYJ7000-21-1A ·····1 pc.

∗ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

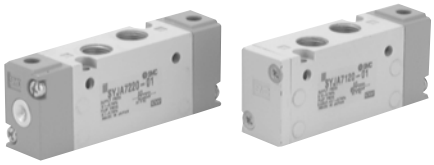
### ⚠ Caution

Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.

## Specifications



Base mounted



Body ported

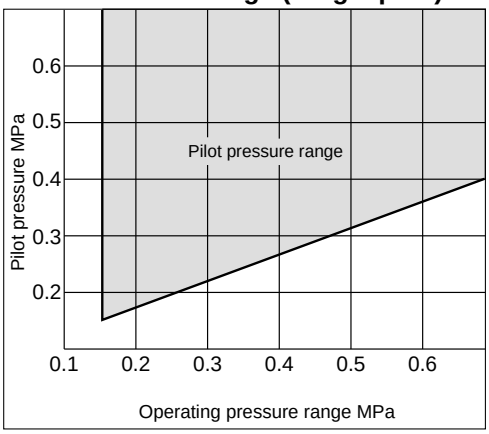
| Fluid | | Air |
|---|---|---|
| Operating pressure range (MPa) | 2 position single | 0.15 to 0.7 |
| | 2 position double | -100 kPa to 0.7 |
| | 3 position | -100 kPa to 0.7 |
| Pilot pressure range (MPa) Note 1) | 2 position single | (0.4 x P+0.1) to 0.7 P: Operating pressure |
| | 2 position double | 0.1 to 0.7 |
| | 3 position | 0.15 to 0.7 |
| Ambient and fluid temperature (°C) | | –10 to 50 (No freezing. Refer to back page 3.) |
| Lubrication | | Not required |
| Mounting orientation | | Unrestricted |
| Impact/Vibration resistance (m/s²) Note 2) | | 300/50 |

Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port {1(P)} for activation.

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve, when pilot signal is ON and OFF. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

### Pilot Pressure Range (Single pilot)




## With Bracket

| Air operated valve | SYJA7120-01-F |
|---|---|

As a bracket is designed for a body, be sure that a bracket is attached when ordering and operating.

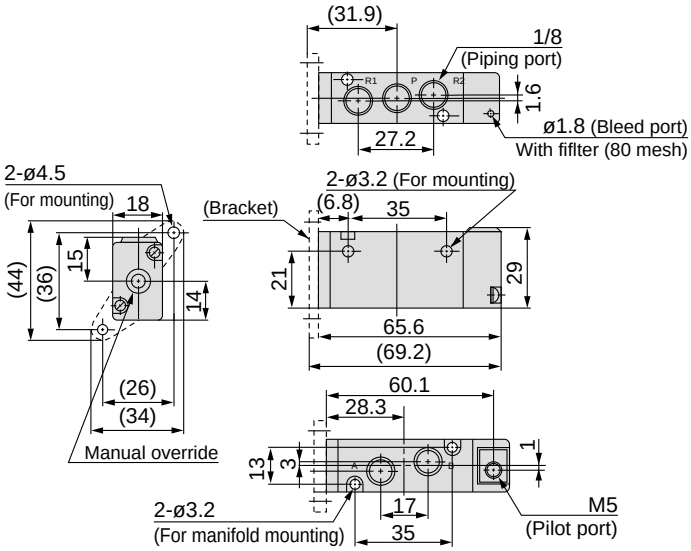
## Flow Characteristics/Weight

| Valve model | | Type of actuation | | Port size | Flow characteristics Note 2) | | | | | | | | Pilot port size | Weight Note 3) (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1→4/2 (P→A/B) | | | | 4/2→5/3 (A/B→EA/EB) | | | | | |
| | | | | | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | C [dm³/(s·bar)] | b | Cv | Q[ℓ/min(ANR)]* | | |
| Body ported | SYJA7□20-01 | 2 position | Single | 1/8 | 2.2 | 0.36 | 0.58 | 582 | 2.4 | 0.34 | 0.63 | 626 | M5 | 90 |
| | | | Double | | | | | | | | | | | 110 |
| | | 3 position | Closed center | | 1.8 | 0.37 | 0.45 | 479 | 2.0 | 0.35 | 0.49 | 525 | | 120 |
| | | | Exhaust center | | 1.2 | 0.50 | 0.34 | 353 | 3.0 [1.3] | 0.35 [0.52] | 0.73 [0.39] | 788 [389] | | |
| | | | Pressure center | | 3.0 [0.83] | 0.37 [0.50] | 0.78 [0.25] | 799 [244] | 1.8 | 0.37 | 0.45 | 479 | | |
| | SYJA7□20-C6 | 2 position | Single | A, B port: C6 (One-touch fitting for ø6) P, R port: 1/8 | 1.6 | 0.33 | 0.4 | 415 | 2.2 | 0.32 | 0.53 | 567 | | 101 |
| | | | Double | | | | | | | | | | | 121 |
| | | 3 position | Closed center | | 1.4 | 0.27 | 0.35 | 349 | 1.9 | 0.33 | 0.49 | 493 | | 131 |
| | | | Exhaust center | | 1.1 | 0.37 | 0.27 | 293 | 2.5 [1.3] | 0.32 [0.54] | 0.61 [0.38] | 644 [395] | | |
| | | | Pressure center | | 1.8 [0.78] | 0.36 [0.40] | 0.45 [0.22] | 476 [212] | 1.6 | 0.30 | 0.39 | 407 | | |
| | SYJA7□20-C8 | 2 position | Single | A, B port: C8 (One-touch fitting for ø8) P, R port: 1/8 | 2.0 | 0.39 | 0.52 | 540 | 2.3 | 0.34 | 0.61 | 600 | | 101 |
| | | | Double | | | | | | | | | | | 121 |
| | | 3 position | Closed center | | 1.7 | 0.35 | 0.42 | 447 | 2.0 | 0.29 | 0.49 | 505 | | 131 |
| | | | Exhaust center | | 1.2 | 0.38 | 0.33 | 322 | 2.6 [1.3] | 0.35 [0.49] | 0.67 [0.38] | 683 [379] | | |
| | | | Pressure center | | 1.9 [0.86] | 0.57 [0.46] | 0.59 [0.25] | 594 [245] | 1.7 | 0.39 | 0.42 | 459 | | |
| Base mounted (with sub-plate) | SYJA7□40-01 | 2 position | Single | 1/8 Note 1) | 2.3 | 0.45 | 0.57 | 649 | 2.8 | 0.37 | 0.71 | 746 | M5 | 170 (90) |
| | | | Double | | | | | | | | | | | 190 (110) |
| | | 3 position | Closed center | | 1.9 | 0.36 | 0.48 | 503 | 2.1 | 0.46 | 0.57 | 598 | | 200 (120) |
| | | | Exhaust center | | 1.2 | 0.48 | 0.35 | 347 | 3.4 [1.3] | 0.36 [0.57] | 0.86 [0.41] | 899 [406] | | |
| | | | Pressure center | | 3.3 [0.85] | 0.43 [0.54] | 0.78 [0.25] | 918 [259] | 2.1 | 0.45 | 0.56 | 593 | | |
| | SYJA7□40-02 | 2 position | Single | 1/4 Note 1) | 2.3 | 0.41 | 0.61 | 630 | 2.9 | 0.35 | 0.74 | 762 | M5 | 170 (90) |
| | | | Double | | | | | | | | | | | 190 (110) |
| | | 3 position | Closed center | | 1.9 | 0.46 | 0.50 | 541 | 2.2 | 0.44 | 0.60 | 616 | | 200 (120) |
| | | | Exhaust center | | 1.3 | 0.45 | 0.35 | 367 | 3.7 [1.4] | 0.27 [0.56] | 0.87 [0.43] | 923 [434] | | |
| | | | Pressure center | | 3.6 [0.83] | 0.23 [0.55] | 0.84 [0.25] | 877 [255] | 2.1 | 0.47 | 0.58 | 602 | | |

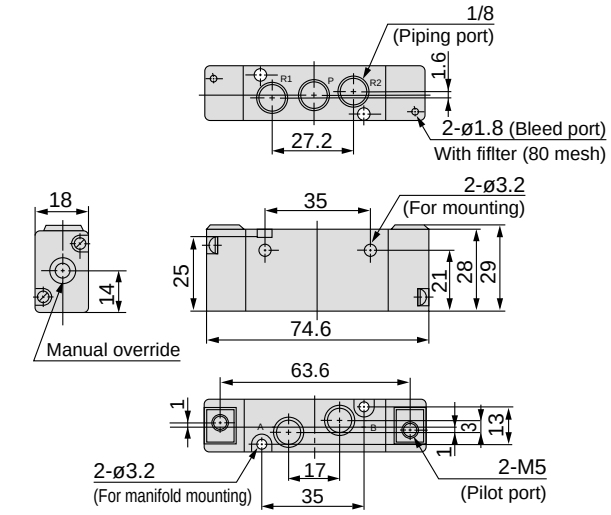
Note1) P, A, B port: Rc1/8 is R1, R2 port: Rc (PT) 1/4
Note2) [ ]: for nomal position
Note3) ( ): without sub-plate
Note4) Model No. for base mounted style without sub-plate is SYJA□40.
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

## Dimensions/Body Ported

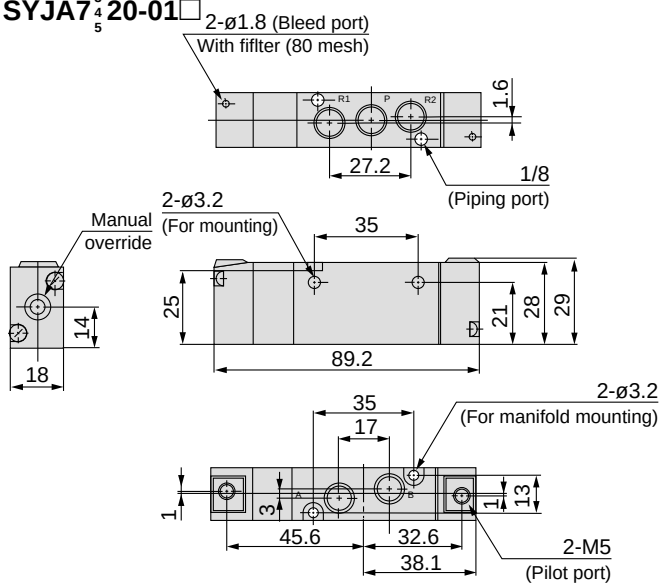
### 2 position single: SYJA7120-01□(-F)




### 2 position double: SYJA7220-01□

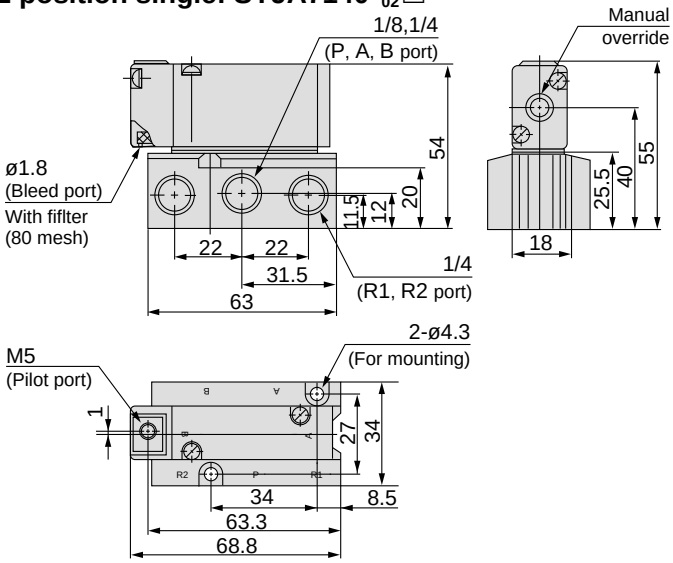



### 3 position closed center/exhaust center/pressure center SYJA7$^{3}_{4}_{5}$20-01□

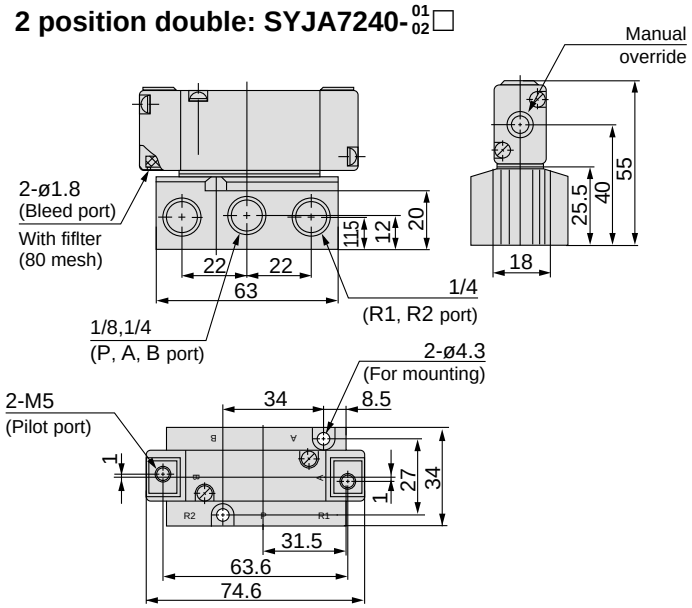



## Dimensions/Base Mounted

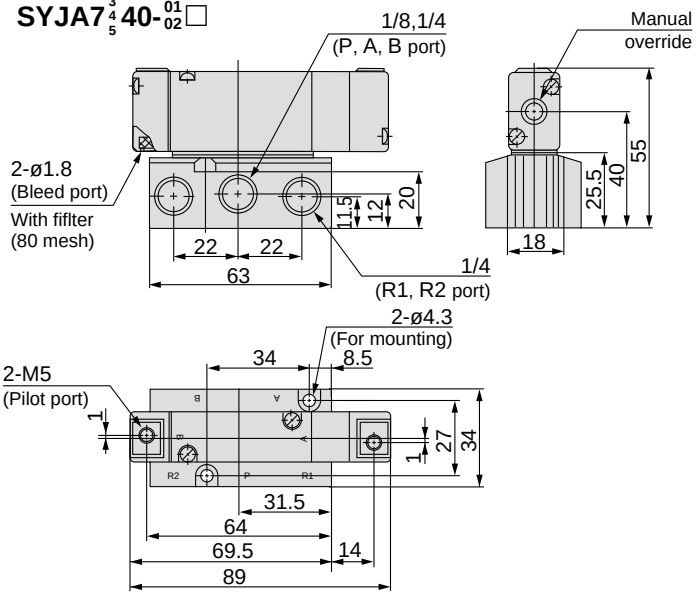
### 2 position single: SYJA7140-$^{01}_{02}$□




### 2 position double: SYJA7240-$^{01}_{02}$□



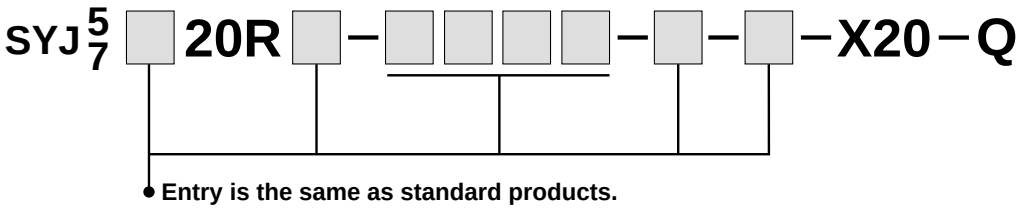

### 3 position closed center/exhaust center/pressure center SYJA7$^{3}_{4}_{5}$40-$^{01}_{02}$□



# *Series* ***SYJ5000/7000***
# Made to Order
**(For detailed specifications, delivery and pricing, please contact SMC.)**

## Body Ported External Pilot

### Applicable solenoid valve series SYJ5□20R, SYJ7□20R




● **Entry is the same as standard products.**

**Operating Pressure Range MPa**

| | |
|---|---|
| Operating pressure range | -100 kPa to 0.7 |
| Pilot pressure range | 0.15 to 0.7 |

**External Pilot Port**

| Series | Port size |
|---|---|
| SYJ5000, SYJ7000 | M5 |

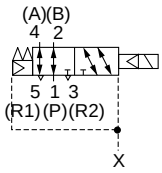
**Dimensions**

**SYJ5000: 8 mm**
**SYJ7000: 8 mm** } **longer in total length.**

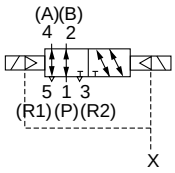
**JIS Symbol**

**Body ported**

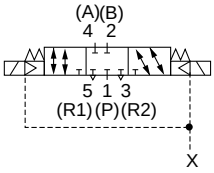
2 position single



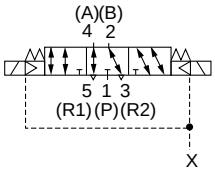

2 position double



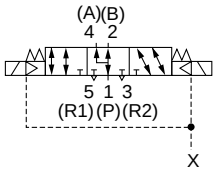

3 position closed center




3 position exhaust center




3 position pressure center



# Series SYJ5000/7000
# Made to Order
## DIN Connector Conforming to EN-175301-803C (former DIN 43650C)

**DIN connector type that conforms to the 8 mm pitch standards between DIN terminals.**

### How to Order Valve

**Type of actuation**

| | |
|---|---|
| 1 | 2 position single solenoid |
| 2 | 2 position double solenoid |
| 3 | 3 position closed center |
| 4 | 3 position exhaust center |
| 5 | 3 position pressure center |

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppressor |
| Z | With light/surge voltage suppressor |

∗ YOZ is not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Bracket**

| | |
|---|---|
| - | Without bracket |
| F | With bracket |

Note) Do not remove the factory installed bracket from models with the bracket option. Removal of he bracket will cause the valve to leak.

**Rated voltage**

DC

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

AC (50/60 Hz)

| | |
|---|---|
| 1 | 100 VAC |
| 2 | 200 VAC |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

**A, B port size**

| | |
|---|---|
| M5 | M5 |
| 01 | 1/8 (SYJ7000 only) |
| C4 | One-touch fitting for ø4 |
| C6 | One-touch fitting for ø6 |
| N3 | One-touch fitting for ø5/32" |
| N7 | One-touch fitting for ø1/4" |

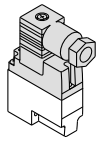
| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Body ported | SYJ | 5 | 1 | 2 | 0 | 5 | Y | | | M5 | | | Q |
| Base mounted | SYJ | 5 | 2 | 4 | 0 | 5 | Y | | | | | | Q |

**Thread type**

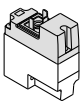
| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

**Electrical entry**

Y: With connector

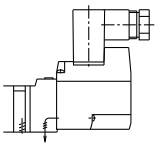


YO: Without connector



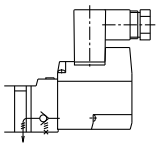
**Body option**

0: Pilot valve individual exhaust for the pilot valve



R port P, E port

3: Common exhaust type for main and pilot valve



R port P, E port

**Port size**

| | | |
|---|---|---|
| - | Without sub-plate | |
| 01 | 1/8 | SYJ5000 |
| | | SYJ7000 |
| 02 | 1/4 | SYJ7000 |

**Series**

| | |
|---|---|
| 5 | SYJ5000 |
| 7 | SYJ7000 |

**Manual override**

| | |
|---|---|
| - | Non-locking push type |
| D | Push-turn locking slotted type |
| E | Push-turn locking lever type |

### How to Order Pilot Valve Assembly

V115 — 5 Y ☐

**Rated voltage**

DC

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

AC (50/60 Hz)

| | |
|---|---|
| 1 | 100 VAC |
| 2 | 200 VAC |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppressor |
| Z | With light/surge voltage suppressor |

∗ YOZ is not available.
∗ For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Electrical entry**

| | | |
|---|---|---|
| Y | DIN terminal | With connector |
| YO | | Without connector |

### DIN Connector Part No.

| | |
|---|---|
| Without light | SY100-82-1 |

**With light**

| Rated voltage | Voltage symbol | No. |
|---|---|---|
| 24 VDC | 24 VN | SY100-82-3-05 |
| 12 VDC | 12 VN | SY100-82-3-06 |
| 100 VAC | 100 VN | SY100-82-3-01 |
| 200 VAC | 200 VN | SY100-82-3-02 |
| 110 VAC (115 VAC) | 110 VN | SY100-82-3-03 |
| 220 VAC (230 VAC) | 220 VN | SY100-82-3-04 |

### ⚠ Caution

1. Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of size (Ø3.5 to Ø7.5). Also be sure to tighten the ground nut and holding screw with the prescribed torque range.Tighten the ground nut and set screw within the specified range of torque. For how to use DIN terminal (wiring procedures, procedures for changing electrical entries, precautions, applicable cable, circuit diagram), refer to back page 8.
2. D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
3. DIN connector except D type has the "N" indication in the end of voltage symbol. In case of DIN connector without light, "N" is not indicated. Please refer to the name plate to distinguish.
4. Dimensions are completely the same as D type connector.
5. When exchanging the pilot valve assembly only, "V115-☐D" is interchangeable with "V115-☐Y". Do not replace V114 (G, H, L, M, W) to V115-☐D/☐Y (DIN terminal), and vice versa.

# Series SYJ3000/5000/7000
# Made to Order
# M8 Connector Conforming to IEC60947-5-2

**M8 Connector** type conforming to **IEC60947-5-2** standard.

## How to Order Valve

**Type of actuation**

| | |
|---|---|
| 1 | 2 position single solenoid |
| 2 | 2 position double solenoid |
| 3 | 3 position closed centre |
| 4 | 3 position exhaust centre |
| 5 | 3 position pressure centre |

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppressor |
| Z | With light/surge voltage suppressor |
| R | With surge voltage suppressor (Non-polar type) |
| U | With light/surge voltage suppressor (Non-polar type) |

**Bracket**

| | |
|---|---|
| - | Without bracket |
| F | With bracket |

Note) Do not remove the factory installed bracket from models with the bracket option. Removal of he bracket will cause the valve to leak.

**A, B port size**

| | |
|---|---|
| M3 | M3 (SYJ3000 only) |
| M5 | M5 |
| 01 | 1/8 (SYJ7000 only) |
| C4 | One-touch fitting for ¯4 |
| C6 | One-touch fitting for ¯6 |
| N3 | One-touch fitting for ¯5/32" |
| N7 | One-touch fitting for ¯1/4" |

**Rated voltage**

DC

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC |
| S | 5 VDC |
| R | 3 VDC |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Body ported | SYJ | 3 | 1 | 2 | 0 | – | 5 | WAO | | | – | M3 | – | – | Q |
| Base mounted (4 port) | SYJ | 3 | 2 | 3 | 0 | – | 5 | WAO | | | – | | – | | Q (For SYJ3000 manifold use only) |
| Base mounted (5 port) | SYJ | 3 | 2 | 4 | 0 | – | 5 | WAO | | | – | | – | | Q |

**Series**

| | |
|---|---|
| 3 | SYJ3000 |
| 5 | SYJ5000 |
| 7 | SYJ7000 |

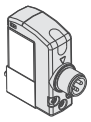
**Body option**

**0:** Pilot valve individual exhaust for the pilot valve

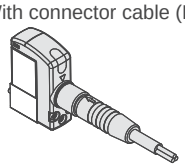
**3:** Common exhaust type for main and pilot valve

**Electrical entry**

**WAO:** Without connector cable



**WA1:** With connector cable (Length 0,3 m)
**WA2:** With connector cable (Length 0,5 m)
**WA3:** With connector cable (Length 1 m)
**WA4:** With connector cable (Length 2 m)
**WA7:** With connector cable (Length 5 m)



**Thread type**

| | |
|---|---|
| - | Rc |
| F | G |
| N | NPT |
| T | NPTF |

**Port size**

| | | |
|---|---|---|
| - | Without sub-plate | |
| M5 | SYJ3000 | |
| 01 | 1/8 | SYJ5000 |
| | | SYJ7000 |
| 02 | 1/4 | SYJ7000 |

**Manual override**

| | |
|---|---|
| - | Non-locking push type |
| D | Push-turn locking slotted type |
| E | Push-turn locking lever type |

## How to Order Pilot Valve Assembly

V115 – 5 WAO

**Rated voltage**

DC

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VAC |
| S | 5 VAC |
| R | 3 VAC |

**Light/surge voltage suppressor**

| | |
|---|---|
| - | Without light/surge voltage suppressor |
| S | With surge voltage suppressor |
| Z | With light/surge voltage suppressor |
| R | With surge voltage suppressor (Non-polar type) |
| U | With light/surge voltage suppressor (Non-polar type) |

**Electrical entry**

| | |
|---|---|
| WAO | Without connector cable |
| WA□ | With connector cable |

Note: □ is for cable length. Please refer to specific Product Precautions 5.

# *Series SYJ*
# Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of **"Caution", "Warning"** or **"Danger"**. To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

**⚠ Caution :** Operator error could result in injury or equipment damage.

**⚠ Warning :** Operator error could result in serious injury or loss of life.

**⚠ Danger :** In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414: Pneumatic fluid power--General rules relating to systems.
Note 2) JIS B 8370: General Rules for Pneumatic Equipment

## ⚠ Warning

**1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.**

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalogue information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

**2. Only trained personnel should operate pneumatically operated machinery and equipment.**

Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

**3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.**

1. Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driver objects have been confirmed.
2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc.

**4. Contact SMC if the product is to be used in any of the following conditions:**

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

# 4/5 Port Solenoid Valves/Common Precautions 1

**Be sure to read before handling.**

## Design

## ⚠ Warning

### 1. Actuator drive

When an actuator, such as a cylinder, is to be driven using a valve, take appropriate measures to prevent potential danger caused by actuator operation.

### 2. Intermediate stopping

When a 3 position closed center valve is used to stop a cylinder at an intermediate position, accurate stopping of the piston in a predetermined position is not possible due to the compressibility of air. Furthermore, since valves and cylinders are not guaranteed for zero air leakage, it may not be possible to hold a stopped position for an extended length of time. Contact SMC if it is necessary to hold a stopped position for an extended time.

### 3. Effect of back pressure when using a manifold

Use caution when valves are used on a manifold, as actuator malfunction due to back-pressure may occur. In case of 3 position closed exhaust center valve or single acting cylinder, take appropriate measures to prevent the malfunction using with individual EXH interface assembly or individual exhaust manifold.

### 4. Holding of pressure (including vacuum)

Since valves are subject to air leakage, they cannot be used for applications such as holding pressure (including vacuum) in a pressure vessel.

### 5. Cannot be used as an emergency shut off valve, etc.

The valves presented in this catalogue are not designed for safety applications such as an emergency shut off valve. If the valves are used in this type of system, other reliable safety assurance measures should also be adopted.

### 6. Maintenance space

The installation should allow sufficient space for maintenance activities (removal of valve, etc.).

### 7. Release of residual pressure

Provide a residual pressure release function for maintenance purpose. Especially in case of 3 position closed center valve, ensure the release of residual pressure between valve and cylinder.

### 8. Vacuum applications

When a valve is used for vacuum switching, etc., take measures against the suction of external dust or other contaminants from vacuum pads and exhaust ports, etc. Moreover, an external pilot type valve should be used in this case. Contact SMC in case of an internal pilot type or air operated valve, etc.

### 9. About using the double solenoid type

When using the double solenoid type for the first time, actuators may travel in an unexpected direction depending on the switching position of a valve. Implement countermeasures not to occur any danger by the actuator's operation.

### 10. Ventilation

When a valve is used inside a sealed control panel, etc., provide ventilation to prevent a pressure increase caused by exhausted air inside the control panel or temperature rise caused by the heat generated by the valve.

## Selection

## ⚠ Warning

### 1. Confirm the specification

The products presented in this catalogue are designed only for use in compressed air systems (including vacuum). Do not operate at pressures or temperatures, etc., beyond the range of specifications, as this can cause damage or malfunction. (Refer to specifications.)

Contact SMC when using a fluid other than compressed air (including vacuum).

### 2. Extended periods of continuous energisation

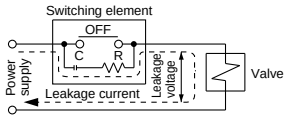
- Continuous energisation of the valve for extended periods of time may have an adverse effect on the solenoid valve performance and the peripheral equipment due to temperature rises caused by the heat generation of the coil. Consult with SMC if valves will be continuously energised for extended periods of time or the energised period per day will be longer than the de-energised period. It is also possible to shorten the energisation period by using valves of the N.O. (normally open) type.
- When solenoid valves are mounted in a control panel, employ measures to radiate excess heat, so that temperatures remain within the valve specification range. Use special caution when three or more stations sequentially aligned on the manifold are continuously energised since this will cause a drastic temperature rise.
  (As for AC specifications, since the applicable products are ready to provide separately, contact SMC.)

## ⚠ Caution

### 1. Momentary energisation

If a double solenoid valve will be operated with momentary energisation, it should be energised for at least 0.1 second. However, depending on the secondary load conditions, it should be energised until the cylinder reaches the stroke end position, as there is a possibility of malfunction otherwise.

### 2. Leakage voltage




When using a resistor in parallel with the switching element or using a C-R element (surge voltage suppressor) for protection of the switching element, note that leakage voltage will increase due to leakage current flowing through the resistor or C-R element. Limit the amount of residual leakage voltage to the following value:

With DC coil : 3% or less of rated voltage

With AC coil : 8% or less of rated voltage

# 4/5 Port Solenoid Valves/Common Precautions 2

**Be sure to read before handling.**

## Selection

### ⚠Caution

**3. Solenoid valve drive for AC with solid state output (SSR, TRIAC output, etc.)**

1) Current leakage
When using a snubber circuit (C-R element) for surge protection of the output element, a very small electric current will still continue to flow in spite of the OFF state. This results in the valve not returning. In the cases when exceeding the tolerance as shown above, take measures to install a bleeder resistor.

2) Minimum load allowable amount (Min. load current)
When the consumption current of a valve is less than the output element's minimum load allowable volume or the margin is small, the output element may not be switched normally. Please confirm SMC.

**4. Surge voltage suppressor**

If a surge protection circuit contains non-ordinary diodes such as Varistor, a residual voltage that is in proportion to the protective elements and the rated voltage will remain. Therefore, give consideration to surge voltage protection of the controller. In the case of diodes, the residual voltage is approximately 1 V.

**5. Use in low temperature environments**

Unless otherwise indicated in the specifications for each valve, operation is possible to –10°C, but appropriate measures should be taken to avoid solidification or freezing of drainage and moisture, etc.

**6. Operation for air blowing**

When using a solenoid valve for air blow, use an external pilot type.
Take note that when internal pilots and external pilots are used on the same manifold, the pressure drop caused by the air blowing can have an effect on the internal pilot type valves.
Moreover, when compressed air within the pressure range of the established specifications is supplied to the external pilot port, and a double solenoid valve is used for air blowing, the solenoids should normally be energised when air is being blown.

**7. Mounting orientation**

Rubber seal: Refer to the specifications of each series.

## Mounting

### ⚠Warning

**1. If air leakage increases or equipment does not operate properly, stop operation.**

Check mounting conditions when air and power supplies are connected. Initial function and leakage tests should be performed after installation.

**2. Instruction manual**

Mount and operate the product after reading the manual carefully and understanding its contents.
Also keep the manual where it can be referred to as necessary.

**3. Painting and coating**

Warnings or specifications printed or pasted on the product should not be erased, removed or covered up. Consult with SMC if paint is to be applied to resinous parts, as this may have an adverse effect due to the paint solvent.

## Port Direction

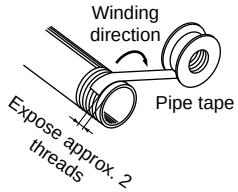
### ⚠Caution

**1. Preparation before piping**

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

**2. Wrapping of sealant tape**

When connecting pipes and fittings, etc., be sure that chips from the pipe thread and sealing materials do not get inside the valve. Furthermore, when pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.




**3. Closed center valves**

When using closed center type valves, carefully check to ascertain that there is no air leakage from the piping between the valves and cylinders.

**4. Screwing in fittings**

When connecting fittings to valves, tighten as indicated below.

1) For M3 and M5 type
(1) When using SMC fittings, follow the guidelines below.
After tightening by hand, tighten an additional M3: 1/4, M5: 1/6 turn with a tightening tool. However, if miniature fittings are used, tighten an additional 1/4 turn with a tightening tool after tightening by hand. For fittings with gaskets in 2 locations, e.g., universal elbow or universal tee, tighten an additional 1/2 turn.

Note) If fittings are over-tightened, air leakage may result due to breaking of fitting threads or deformation of the gaskets. However, if fittings are not tightened sufficiently, loosening of the threads and air leakage and may occur.

(2) When fittings other than SMC fittings are used, follow the instructions of the respective fitting manufacturer.

2) For Rc (PT)
When installing fitting, etc., follow the given torque levels below.

**Tightening Torque for Piping**

| Connection threads | Applicable tightening torque N·m |
|---|---|
| 1/8 | 7 to 9 |
| 1/4 | 12 to 14 |
| 3/8 | 22 to 24 |
| 1/2 | 28 to 30 |
| 3/4 | 28 to 30 |
| 1 | 36 to 38 |
| 11/4 | 40 to 42 |
| 11/2 | 48 to 50 |
| 2 | 48 to 50 |

**5. Connection of piping to products**

When connecting piping to a product, refer to its instruction manual to avoid mistakes regarding the supply port, etc.

# 4/5 Port Solenoid Valves/Common Precautions 3

**Be sure to read before handling.**

## Wiring

### ⚠Caution

**1. Polarity**

When connecting power to a DC specification solenoid valve equipped with (indicator light) surge voltage suppressor, confirm whether or not there is polarity.
If there is polarity, take note of the following points.

Without built-in diode to protect polarity (including any power saving circuit):

If a mistake is made regarding polarity, the diode in the valve, the control device switching element or power supply equipment, etc., may burn out.

With diode to protect polarity:

If a mistake is made regarding polarity, it will not be possible to switch the valve.

**2. Applied voltage**

When electric power is connected to a solenoid valve, be careful to apply the proper voltage. Improper voltage may cause malfunction or coil damage.

**3. Confirm the connections.**

After completing the wiring, confirm that the connections are correct.

## Lubrication

### ⚠Caution

**1. Lubrication**

[Rubber seal]

1) The valve has been lubricated for life at the factory, and does not require any further lubrication.
2) In the event that it is lubricated, use class 1 turbine oil (without additives), ISO VG32.
   However, once lubrication is applied it must be continued, as loss of the original lubricant may lead to malfunction.
   Contact SMC regarding class 2 turbine oil (with additives), ISO VG32.

## Air Supply

### ⚠Warning

**1. Use clean air.**

Do not use compressed air which contains chemicals, synthetic oils containing organic solvents, salts or corrosive gases, etc., as this can cause damage or malfunction.

## Air Supply

### ⚠Caution

**1. Install air filters.**

Install air filters close to valves at their upstream side. A filtration degree of 5 μm or less should be selected.

**2. Install an air dryer, after cooler or Drain Catch (water separator), etc.**

Air that includes excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an air dryer, after-cooler or Drain Catch (water separator), etc.

**3. If excessive carbon dust is generated, eliminate it by installing mist separators at the upstream side of valves.**

If excessive carbon dust is generated by the compressor, it may adhere to the inside of valves and cause malfunction.

Refer to “SMC Best Pneumatics” catalogue for compressed air quality.

## Operating Environment

### ⚠Warning

**1. Do not use valves in atmospheres of corrosive gases, chemicals, salt water, water or steam or where there is direct contact with any of these.**

**2. Products with IP65 enclosures (based on IEC60529) are protected against dust and water, however, these products cannot be used in water.**
**Take measures to prevent water and dust from coming from the exhaust port.**

**3. Products compliant to IP65 satisfy the specifications by mounting each product properly. Be sure to read the Specific Product Precautions for each product.**

**4. Do not use in an explosive atmosphere.**

**5. Do not use in locations subject to vibration or impact. Confirm the specifications in the main section of the catalogue.**

**6. A protective cover, etc., should be used to shield valves from direct sunlight.**

**7. Shield valves from radiated heat generated by nearby heat sources.**

**8. Employ suitable protective measures in locations where there is contact with water droplets, oil or welding spatter, etc.**

**9. When solenoid valves are mounted in a control panel or are energised for extended periods of time, employ measures to radiate excess heat, so that temperatures remain within the valve specification range.**

## Maintenance

## ⚠ Warning

**1. Perform maintenance procedures as shown in the instruction manual.**

If handled improperly, malfunction or damage of machinery or equipment may occur.

**2. Equipment removal and supply/exhaust of compressed air**

When equipment is removed, first confirm that measures are in place to prevent dropping of work pieces and run-away of equipment, etc. Then cut the supply pressure and power, and exhaust all compressed air from the system using its residual pressure release function.

In the case of 3 position closed center style, exhaust the residual pressure between valve and cylinder.

When the equipment is to be started again after remounting or replacement, first confirm that measures are in place to prevent lurching of actuators, etc., and then confirm that the equipment is operating normally.

**3. Low frequency operation**

Valves should be switched at least once every 30 days to prevent malfunction. (Use caution regarding the air supply.)

**4. Manual override operation**

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

## ⚠ Caution

**1. Drain flushing**

Remove drainage from air filters regularly.

# *Series* ***SYJ3000/5000/7000***
# Specific Product Precautions 1

**Be sure to read before handling.**
**Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.**

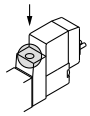
## Manual Override Operation

### ⚠Warning

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

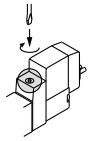
■ **Non-locking push type [Standard]**

Press in the direction of the arrow

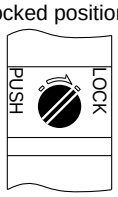


■ **Push-turn locking slotted type [Type D]**

While pressing, turn in the direction of the arrow.
If it is not turned, it can be operated the same way as the non-locking type.



Locked position

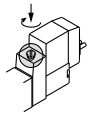



### ⚠Caution

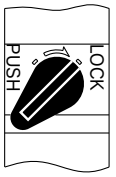
When operating the locking type D with a screw driver, turn it gently using a watchmakers screw driver.
[Torque: Less than 0.1 N·m]

■ **Push-turn locking lever type [Type E]**

While pressing, turn in the direction of the arrow.
If it is not turned, it can be operated the same way as the non-locking type.



Locked position




### ⚠Caution

When locking the manual override on the push-turn locking types (D, E), be sure to push it down before turning.
Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

## Solenoid Valve for 200 V, 220 VAC Specifications

### ⚠Warning

Solenoid valves with DIN terminal connector AC specifications have a built-in rectifier circuit in the pilot section to operate the DC coil.
With 200 V, 220 VAC specification pilot valves, this built-in rectifier generates heat when energised. The surface may become hot depending on the energised condition; therefore, do not touch the solenoid valves.

## Common Exhaust Type for Main and Pilot Valve

### ⚠Caution

Pilot air is exhausted through the main valve body rather than directly to atmosphere.

- Suitable for applications where exhausting the pilot valve to atmosphere would be detrimental to the surrounding working environment.
- For use in extremely dirty environments where there is the possibility that dust could enter the pilot exhaust and damage the valve.

Ensure that the piping of exhaust air is not too restrictive.

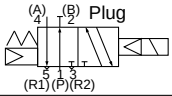
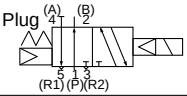
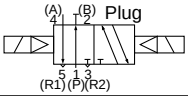
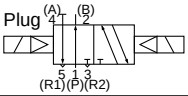
## Series SYJ3000/5000/7000 Mixed Installation of 3 Port and 5 Port Valves on Same Manifold.

### ⚠Caution

Series SYJ3000/5000/7000 and Series SYJ300/500/700 can be mounted on the same manifold. How to mount on the same manifold is shown on the following pages.

SYJ3000, SYJ300 ····· P. 14
SYJ5000, SYJ500 ····· P. 38
SYJ7000, SYJ700 ····· P. 61

If 4 or 5 port valve is used as a 3 port valve
Series SYJ3000, 5000, 7000 may be used as a N.C.or N.O. 3 port valve by plugging one of the A,B ports. Be sure not to plug the exhaust ports (R). Can be used when a double solenoid, 3 port valve is required.

| Plug position | | B port | A port |
|---|---|---|---|
| Type of actuation | | N.C. | N.O. |
| Number of solenoids | Single |  |  |
| | Double |  |  |



(JIS symbols above: Series SYJ5000)

# Series SYJ3000/5000/7000
# Specific Product Precautions 2

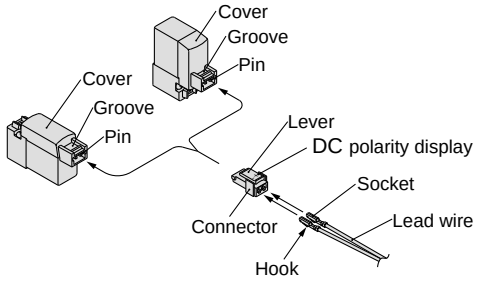
**Be sure to read before handling.**
**Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.**

## How to Use Plug Connector

## ⚠ Caution

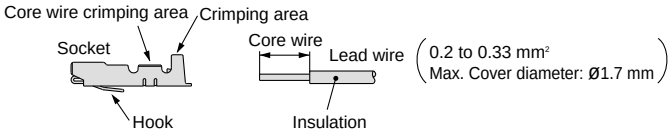
### 1. Attaching and detaching connectors

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.




### 2. Crimping of lead wires and sockets

Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.
Use an exclusive crimping tool for crimping.
(Contact SMC for special crimping tools.)



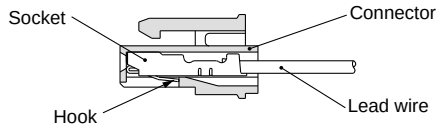

### 3. Attaching and detaching sockets with lead wires

**• Attaching**

Insert the sockets into the square holes of the connector (+, – indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

**• Detaching**

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm). If the socket will be used again, first spread the hook outward.




## Plug Connector Lead Wire Length

## ⚠ Caution

Standard length is 300 mm, but the following lengths are also available.

### How to Order Connector Assembly

For DC: **SY100 – 30 – 4A –** □

Without lead wire: **SY100 – 30 – A**
(with connector and 2 of sockets only)

**● Lead wire length**

| | |
|---|---|
| **-** | 300 mm |
| **6** | 600 mm |
| **10** | 1000 mm |
| **15** | 1500 mm |
| **20** | 2000 mm |
| **25** | 2500 mm |
| **30** | 3000 mm |
| **50** | 5000 mm |

### How to Order

Include the connector assembly part number together with the part number for the plug connector's solenoid valve without connector.

Ex.) In case of 2000 mm of lead wire
**For DC**
**SYJ3120-5LO-M3**
**SY100-30-4A-20**

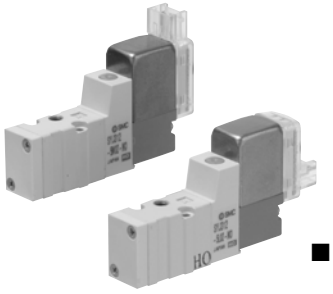
# Series SYJ3000/5000/7000
# Specific Product Precautions 3

**Be sure to read before handling.**
**Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.**

## Surge Voltage Suppressor

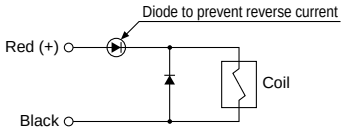
## ⚠Caution

**<For DC>**
**Grommet, L/M Plug Connector**

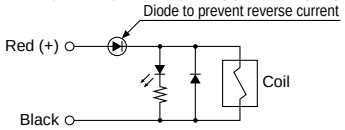


### ■ Standard type (with polarity)

**Surge voltage suppressor (□S)**

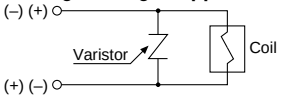



**With light/surge voltage suppressor (□Z)**

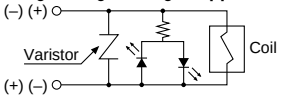



### ■ Non-polar type

**With surge voltage suppressor (□R)**




**With light/surge voltage suppressor (□U)**

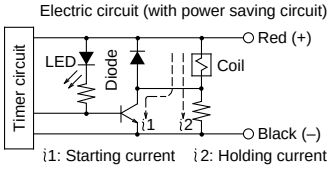



- Connect the standard type in accordance with the +, – polarity indication. (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24 V and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)
- When wiring is done at the factory, positive (+) is red and negative (–) is black.

### ■ With power saving circuit

Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energised state. (Effective energising time is over 62 ms at 24 VDC.)

Electric circuit (with power saving circuit)



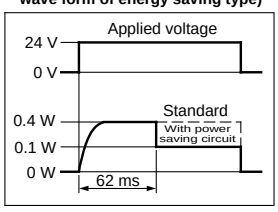

1: Starting current 2: Holding current

### Operating Principle

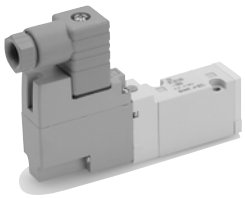
With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electric wave data to the right.

- Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for the power saving circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 0.5 volt drop due to the transistor. (For details, refer to the solenoid specifications for the individual valve.)

**(In the case of SYJ$^{3}_{7}$□□T, the electric wave form of energy saving type)**

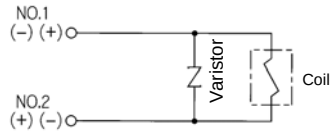



**DIN Terminal**

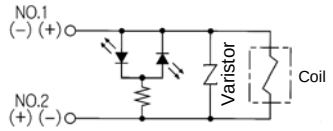


DIN terminal has no polarity.

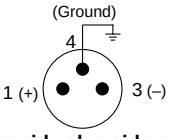
**With surge voltage suppressor (DS)**



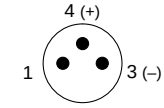

**With light/surge voltage suppressor (DZ)**



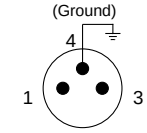

**M8 Connector**



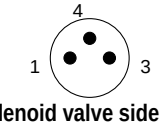

**Solenoid valve side pin wiring diagram (For W type)**




**Solenoid valve side pin wiring diagram (For WA type)**



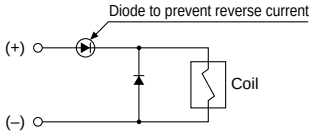

**Solenoid valve side pin wiring diagram (For W type)**



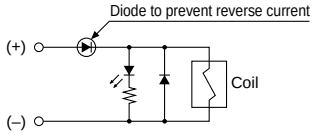

**Solenoid valve side pin wiring diagram (For WA type)**

### ■ Standard type (with polarity)

**With light/surge voltage suppressor (□S)**

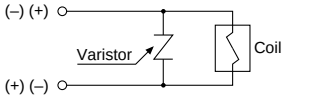



**With light/surge voltage suppressor (□Z)**

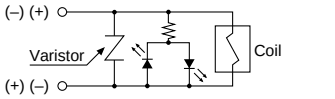



### ■ Non-polar type

**With surge voltage suppressor (□R)**




**With light/surge voltage suppressor (□U)**




- In the case of standard type, connect + to 1 and – to 3 for W type, and connect + to 4 and - to 3 for WA type, according the polarity.
- For DC voltages other than 12 V and 24 V, incorrect wiring will case damage to the surge suppressor circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)

# Series SYJ3000/5000/7000
# Specific Product Precautions 4

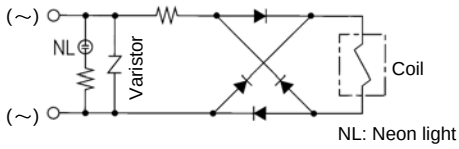
**Be sure to read before handling.**
**Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.**

## Surge Voltage Suppressor

**<For AC>**
(There is no "S" type because the generation of surge voltage is prevented by a rectifier.)

### DIN Terminal

**With light (DZ)**




Note) Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage; therefore, protect the controller side from the surge. The residual voltage of the diode is approximately 1 V.

## How to Use DIN Terminal

## ⚠Caution

### Connection

1. Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
2. After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
4. Secure the cord by fastening the ground nut.

### ⚠Caution

When making connections, take note that using other than the supported size (ø3.5 to ø7) heavy duty cord will not satisfy IP65 (enclosure) standards. Also, be sure to tighten the ground nut and holding screw within their specified torque ranges.

## ⚠Caution

### Changing the entry direction

After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

∗ When equipped with a light, be careful not to damage the light with the cord's lead wires.

### Precautions

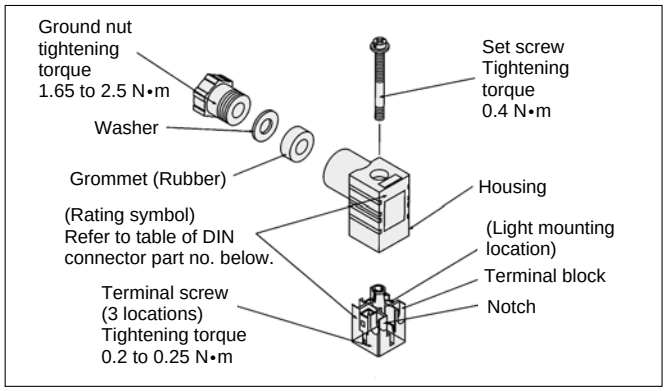
Plug in and pull out the connector vertically without tilting to one side.

### Compatible cable

Cord O.D.: ø3.5 to ø7

(Reference) 0.5 mm², 2-core or 3-core, equivalent to JIS C 3306

## How to Use DIN Terminal




## DIN Connector Part No.

## ⚠Caution

| Without light | SY100-61-1 |
|---|---|

### With light

| Rated voltage | Voltage symbol | Model no. |
|---|---|---|
| 24 VDC | 24 V | SY100-61-3-05 |
| 12 VDC | 12 V | SY100-61-3-06 |
| 100 VAC | 100 V | SY100-61-2-01 |
| 200 VAC | 200 V | SY100-61-2-02 |
| 110 VAC | 110 V | SY100-61-2-03 |
| 220 VAC | 220 V | SY100-61-2-04 |

### Circuit Diagram with Light


Note) Refer to page 80 for DIN connector (Y) conforming to EN-175301-803C (former DIN 43650C).

# Series SYJ3000/5000/7000
# Specific Product Precautions 5

**Be sure to read before handling.**
**Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.**

## Connector Assembly with Cover

### ⚠Caution

**Connector assembly with dust proof protective cover.**

- Effective to prevention of short circuit failure due to the entry of foreign matter into the connector.
- Chloroprene rubber for electrical use, which provides outstanding weather resistance and electrical insulation, is used for the cover material. However, do not allow contact with cutting oil, etc.
- Simple and unencumbered appearance by adopting round-shaped cord.

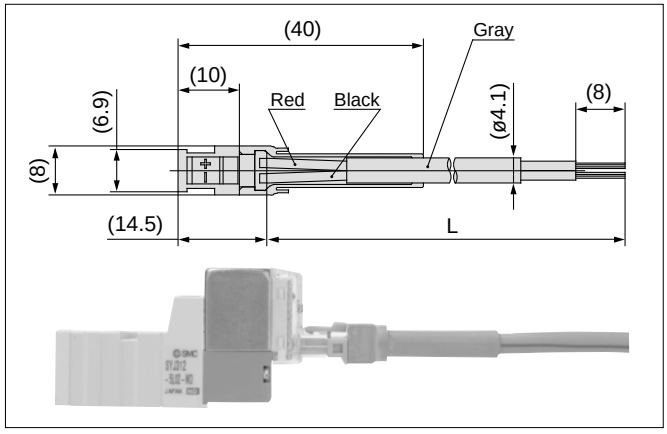
### How to Order

**SY100−68−A−□**

**Lead wire length**

| | |
|---|---|
| **-** | 300 mm |
| **6** | 600 mm |
| **10** | 1000 mm |
| **15** | 1500 mm |
| **20** | 2000 mm |
| **25** | 2500 mm |
| **30** | 3000 mm |
| **50** | 5000 mm |

### Connector Assembly with Cover: Dimensions




### How to Order

Enter the part number for a plug connector solenoid valve without connector together with the part number for a connector assembly with cover.

Ex. 1) Lead wire length of 2000 mm
SYJ3120-5LOZ-M3-Q
SY100-68-A-20

Ex. 2) Lead wire length of 300 mm (standard)
SYJ3120-5LPZ-M3-Q
Symbol for connector assembly with cover

∗ In this case, the part number for the connector assembly with cover is not required.

## M8 Connector

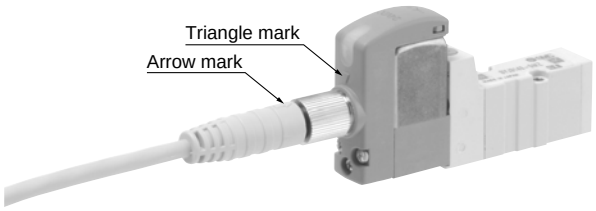
### ⚠Caution

1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note: these products are not intended for use in water.
Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5 mm or less when used with the Series SYJ3000 manifold. If more than 10.5 mm, it cannot be mounted due to the size.
2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6 Nm)
3. The excessive stress on the cable connector will not be able to satisfy the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

### ⚠Caution

Failure to meet IP65 performance may result if using alternative connectors than those shown above, or when insufficiently tightened.

• Connector cable mounting




Note) Connector cable should be mounted in the correct direction. Make sure that the arrow symbol on the connector is facing the triangle symbol on the valve when using SMC connector cable (V100-49-1-□). Be careful not to squeeze it in the wrong direction, as problems such as pin damage may occur.

### ■ Connector cable

• M8 connector cable for M8 can be ordered as follows:

### How to Order

1. To order solenoid valve and connector cable at the same time. (Connector cable will be included in the shipment of the solenoid valve.)

**SYJ$\frac{3}{5}$□□□−□□□□−□□-Q**

Electrical entry
**W1, WA1**: Cable length 300 mm
**W2, WA2**: Cable length 500 mm
**W3, WA3**: Cable length 1000 mm
**W4, WA4**: Cable length 2000 mm
**W7, WA7**: Cable length 5000 mm

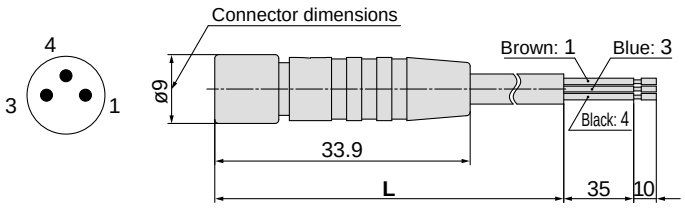
Ex. 1) Cable length: 300 mm
SYJ3120-5W1ZE-M3-Q
Symbol for electrical entry

# Series SYJ3000/5000/7000
# Specific Product Precautions 6

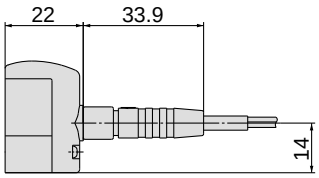
**Be sure to read before handling.**
**Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.**

## M8 Connector

2. To order connector cable only



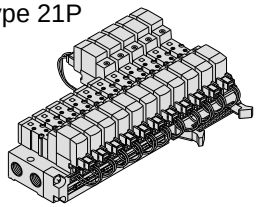

| Cable length (L) | No. |
|---|---|
| 300 mm | V100-49-1-1 |
| 500 mm | V100-49-1-2 |
| 1000 mm | V100-49-1-3 |
| 2000 mm | V100-49-1-4 |
| 5000 mm | V100-49-1-7 |



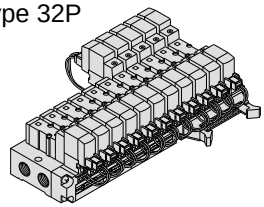

## Flat Ribbon Cable Manifold

### ⚠Caution

Type 21P



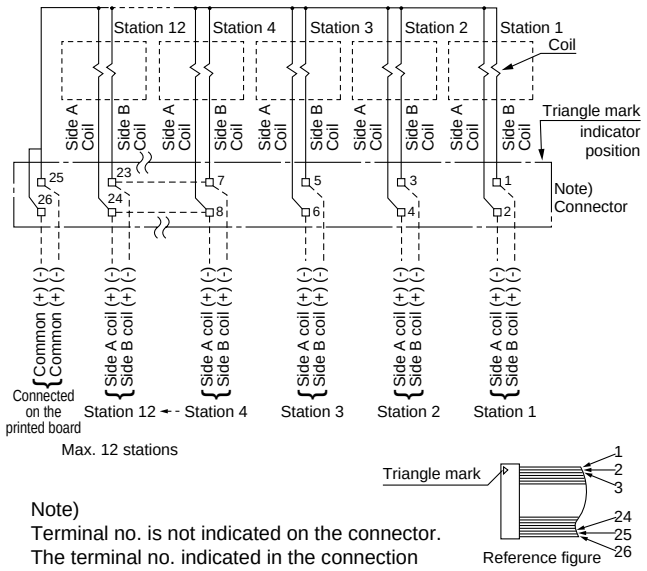
Type 32P



- In the manifold valves, the wiring to the individual valves is provided on a printed circuit board, and the connection to the external wires is consolidated through the use of a flat cable.
- A single MIL flat cable connects the entire manifold to your power source. This greatly reduces installation time.

## Flat Ribbon Cable Manifold

### Manifold Internal Wiring




Note)
Terminal no. is not indicated on the connector. The terminal no. indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3····26 from the triangle mark side on the flat ribbon cable of connector.

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid B side.
- The maximum number of stations that can be accommodated is 12. For more stations, contact SMC.
- Only non-polar valves are available for the DC flat cable manifold, therefore negative COM or positive COM wiring of the manifold is possible. The valve does not switch with negative COM if a Z type is used. Be sure to use a positive COM.

## Bracket

### ⚠Caution

For bracket attached styles of SYJ3000 (Single) and SYJ7000, do not use it without bracket.

## Replacement of Pilot Valve

### ⚠Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

| Model | Thread size | Tightening torque |
|---|---|---|
| SYJ3000 | M1.7 | 0.12 N·m |
| SYJ5000 | M2.5 | 0.45 N·m |
| SYJ7000 | M3 | 0.8 N·m |

# Series SYJ3000/5000/7000
# Specific Product Precautions 7

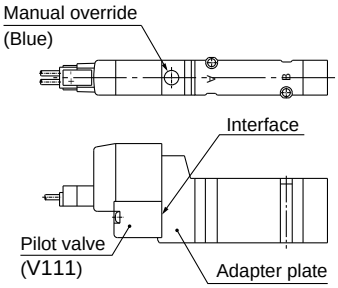
**Be sure to read before handling.**
**Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.**

## Replacement of Pilot Valve

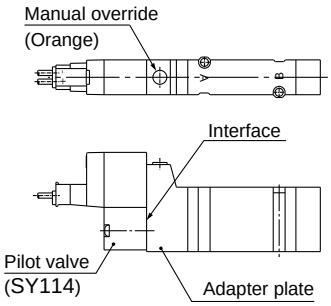
### ⚠Caution

Pilot valves in this series are improved to provide excellent energy saving results. However following this improvement, these new valves are no longer compatible with the conventional pilot valve used at the interface. Consult with SMC when you need to exchange these pilot valves, in the case of manual override (marked in orange) of the adapter plate.

**New type**

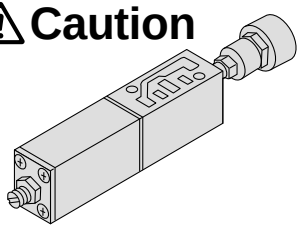



**Conventional type**




## Interface Regulator

### ⚠Caution



Spacer type regulating valve on manifold block can regulate the pressure to the valve individually.

### Specifications

| Interface regulator | | ARBYJ5000 | ARBYJ7000 |
|---|---|---|---|
| Applicable solenoid valve model | | SYJ5000 | SYJ7000 |
| Regulating port | | P | P |
| Proof pressure | | 1.5 MPa | |
| Maximum operating pressure | | 1.0 MPa | |
| Set pressure range | | 0.05 to 0.7 MPa Note 1) | |
| Ambient and fluid temperature | | -5 to 60°C (No freezing) Note 2) | |
| Thread size for connection of pressure gauge | | M5 | |
| Weight (kg) | | 0.06 | 0.09 |
| Effective area at exhaust side ($mm^2$) Note 3) S at $P_1$ = 0.7 MPa, $P_2$ = 0.5 MPa | P→A | 1.9 | 5.1 |
| | P→B | 2.1 | 5.8 |
| Effective area at supply side ($mm^2$) Note 3) S at $P_1$ = 0.7 MPa, $P_2$ = 0.5 MPa | A→EA | 4.5 | 12.6 |
| | B→EB | 4.5 | 12.6 |

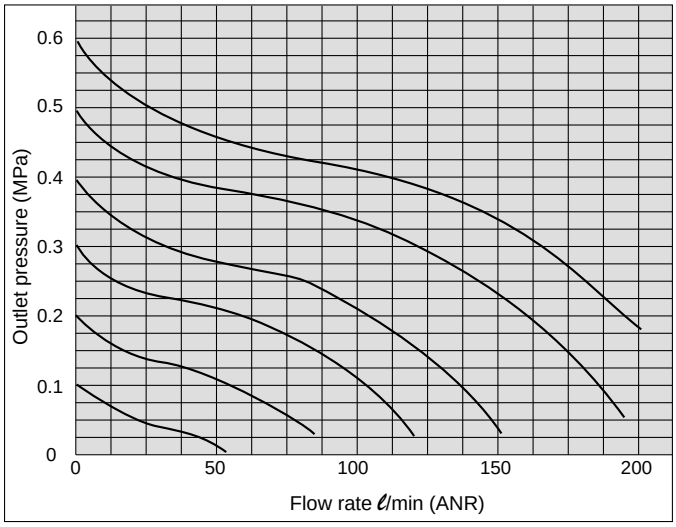
## Interface Regulator

Note 1) Set the pressure within the operating pressure range of the solenoid valve.
Note 2) The maximum operating temperature for the solenoid valve is 50°C.
Note 3) The effective area listed is for a single solenoid 2 position valve mounted on a sub-plate.
Note 4) Apply pressure from P port in the base for interface regulator.

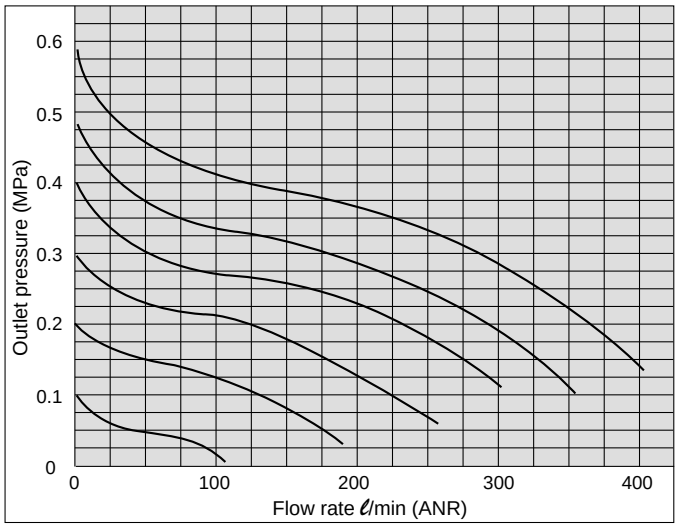
### Flow Characteristics

(P → A) Condition: Inlet pressure 0.7 MPa

● ARBYJ5000-00-P-Q




● ARBYJ7000-00-P-Q



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SMC Pneumatik GmbH (Austria).
Girakstrasse 8, A-2100 Korneuburg
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E-mail: office@smc.at
http://www.smc.at

**Belgium**
SMC Pneumatics N.V./S.A.
Nijverheidsstraat 20, B-2160 Wommelgem
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SMC Pneumatik A/S
Knudsminde 4B, DK-8300 Odder
Phone: +45 70252900, Fax: +45 70252901
E-mail: smc@smc-pneumatik.dk
http://www.smcdk.com

**Estonia**
SMC Pneumatics Estonia OÜ
Laki 12, 106 21 Tallinn
Phone: +372 6510370, Fax: +372 65110371
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SMC Pneumatics Finland Oy
PL72, Tiistinniityntie 4, SF-02231 ESPOO
Phone: +358 207 513513, Fax: +358 207 513595
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SMC Pneumatique, S.A.
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Phone: +33 (0)1-6476 1000, Fax: +33 (0)1-6476 1010
E-mail: contact@smc-france.fr
http://www.smc-france.fr

**Germany**
SMC Pneumatik GmbH
Boschring 13-15, D-63329 Egelsbach
Phone: +49 (0)6103-4020, Fax: +49 (0)6103-402139
E-mail: info@smc-pneumatik.de
http://www.smc-pneumatik.de

**Greece**
SMC Hellas EPE
Anagenniseos 7-9 - P.C. 14342. N. Philadelphia, Athens
Phone: +30-210-2717265, Fax: +30-210-2717766
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**Hungary**
SMC Hungary Ipari Automatizálási Kft.
Budafoki ut 107-113, H-1117 Budapest
Phone: +36 1 371 1343, Fax: +36 1 371 1344
E-mail: office@smc.hu
http://www.smc.hu

**Ireland**
SMC Pneumatics (Ireland) Ltd.
2002 Citywest Business Campus, Naas Road, Saggart, Co. Dublin
Phone: +353 (0)1-403 9000, Fax: +353 (0)1-464-0500
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SMC Italia S.p.A
Via Garibaldi 62, I-20061Carugate, (Milano)
Phone: +39 (0)2-92711, Fax: +39 (0)2-9271365
E-mail: mailbox@smcitalia.it
http://www.smcitalia.it

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SMC Pneumatics Latvia SIA
Smerla 1-705, Riga LV-1006
Phone: +371 781-77-00, Fax: +371 781-77-01
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**Lithuania**
SMC Pneumatics Lietuva, UAB
Oslo g.1, LT-04123 Vilnius
Phone: +370 5 264 81 26, Fax: +370 5 264 81 26

**Netherlands**
SMC Pneumatics BV
De Ruyterkade 120, NL-1011 AB Amsterdam
Phone: +31 (0)20-5318888, Fax: +31 (0)20-5318880
E-mail: info@smcpneumatics.nl
http://www.smcpneumatics.nl

**Norway**
SMC Pneumatics Norway A/S
Vollsveien 13 C, Granfos Næringspark N-1366 Lysaker
Tel: +47 67 12 90 20, Fax: +47 67 12 90 21
E-mail: post@smc-norge.no
http://www.smc-norge.no

**Poland**
SMC Industrial Automation Polska Sp.z.o.o.
ul. Poloneza 89, PL-02-826 Warszawa,
Phone: +48 22 211 9600, Fax: +48 22 211 9617
E-mail: office@smc.pl
http://www.smc.pl

**Portugal**
SMC Sucursal Portugal, S.A.
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http://www.smces.es

**Romania**
SMC Romania srl
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http://www.smcromania.ro

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SMC Pneumatik LLC.
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**Slovakia**
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Phone: +421 2 444 56725, Fax: +421 2 444 56028
E-mail: office@smc.sk
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**Slovenia**
SMC industrijska Avtomatika d.o.o.
Mirnska cesta 7, SLO-8210 Trebnje
Phone: +386 7 3885412 Fax: +386 7 3885435
E-mail: office@smc.si
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**Spain**
SMC España, S.A.
Zuazobidea 14, 01015 Vitoria
Phone: +34 945-184 100, Fax: +34 945-184 124
E-mail: post@smc.smces.es
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**Sweden**
SMC Pneumatics Sweden AB
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Phone: +46 (0)8-603 12 00, Fax: +46 (0)8-603 12 90
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http://www.smc.nu

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SMC Pneumatics (UK) Ltd
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